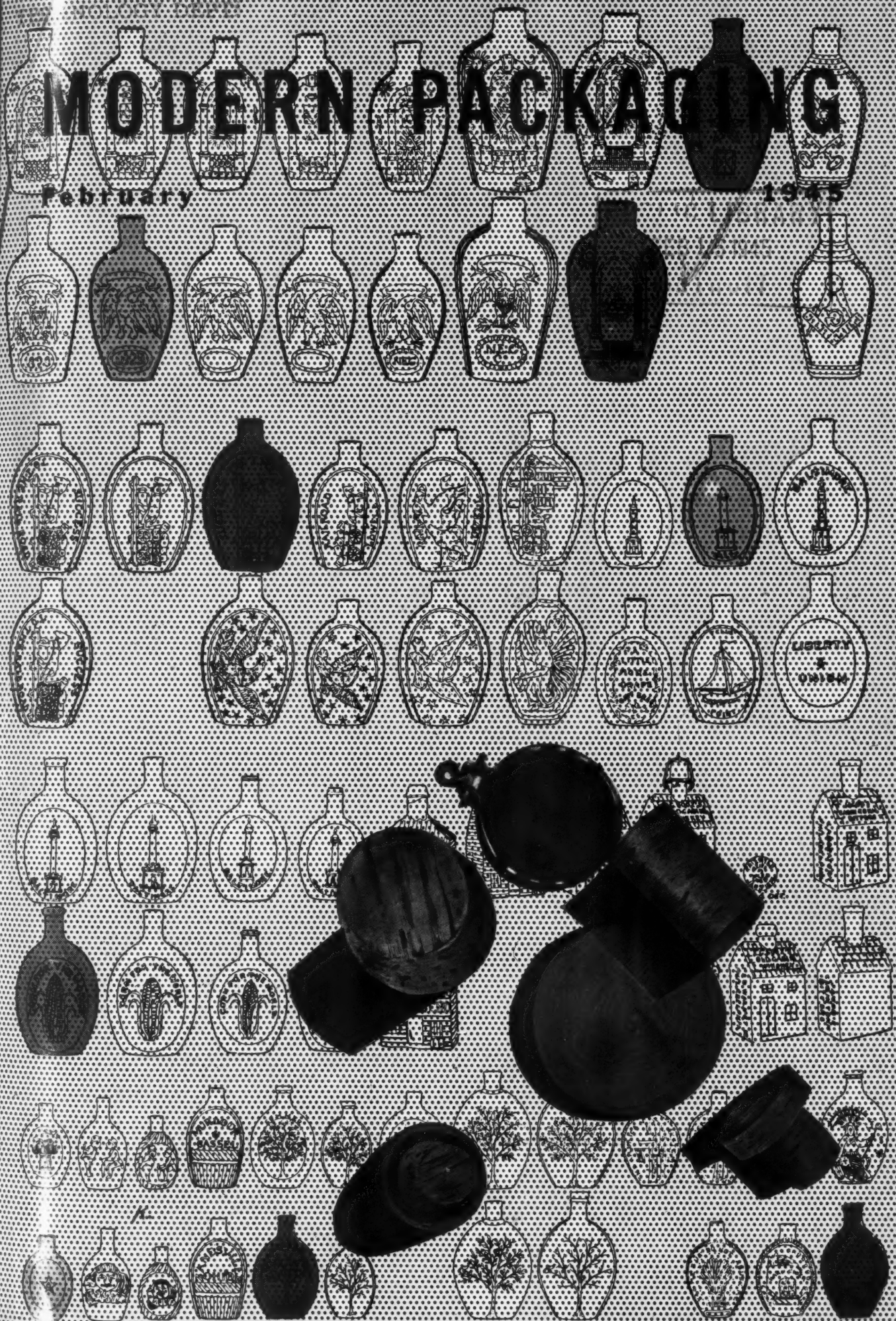


February

1945





Rely on National . . . with its expert knowledge of the mechanical and chemical requirements of each adhesive application . . . to provide trouble-free operation at high speeds.

What are the clean machining qualities of an adhesive? Many. Very many. When rapidly rotating rollers have a churning action, the adhesive must be non-foaming. When exposed to air, it must not skin over . . . must not crystallize so rapidly that it builds up on glue pots, brushes, wheels . . . must not corrode metal or harden rubber parts . . . must not break down under continuous agitation or coagulate in the machine or during normal periods of storage.

In all transfer and stencil applications of glue, the adhe-

sive must be non-stringy so as to break short and clean; and must be non-creeping to adhere strictly to the stencil pattern. At high speeds, the adhesive must neither throw from the applicator nor spatter the work in any way to cause labels or cartons to 'lock' . . . and interfere with subsequent pick-up, folding and filling operations of labeling, envelope making, bag sealing, carton filling, etc.

You can safely rely on National . . . with its practical background of adhesive applications . . . to provide the clean machining qualities needed to handle your specific job *efficiently* at its highest level of production.

Offices: 270 Madison Avenue, New York 16; 3641 So. Washtenaw Avenue, Chicago 32; 739 Battery Street, San Francisco 11, and other principal cities.

national ADHESIVES

EVERY TYPE OF ADHESIVE FOR EVERY TYPE OF ADHESION

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Producers of Metal and Molded

Caps for Glass Packages



Phoenix Metal Cap Co., Chicago 8 and Brooklyn 18

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THE COVER

As a background for these realistic closures, the artist, Peter Piening, has chosen a stylized design of Early American glass flasks.

The bottles are reproduced by special permission from *American Glass* by George S. and Helen McKearin through the courtesy of Crown Publishers, New York.

All editorial contents bearing on military subjects have been approved for publication by the Armed Services.

MODERN PACKAGING is regularly indexed in the *Industrial Arts Index*.

MODERN PACKAGING

VOLUME 18

FEBRUARY 1945

NUMBER 6

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EXECUTIVE and EDITORIAL OFFICES: 122 E. 42nd St., New York 17, N. Y. WASHINGTON OFFICE: 625 Colorado Bldg., 14th & G Sts., D. C. 6

Published the 5th of each month by Breskin Publishing Company. Publication office: Twentieth and Northampton Sts., Easton, Pa. Subscription \$5.00 per year in United States; Canadian, \$5.50; foreign, \$6.00. Two-year subscription: United States, \$8.00; Canadian, \$9.00; foreign, \$10.00. All foreign subscriptions payable in United States currency or equivalent in foreign currency computed in current exchange. Price this issue, 50¢ per copy. Copyright 1945 by Breskin Publishing Company. All rights reserved including the right to reproduce this book or portion thereof in any form. Printed in U. S. A. Acceptance under the Act of June 5, 1934, at Easton, Pa. Authorized October 7, 1936.

G
BER 6

**ALL FIVE are
REDINGTON
Cartoned...**

**...the two largest sizes on
this one adjustable unit**



Noted for its high standards of packaging efficiency is the Emerson Drug Co. plant at Baltimore, Maryland. *Every phase of production operates with clock-like precision.*

That same clock-like precision and efficiency is the standard followed in building Redington packaging machines, on the job at Emerson since 1930.

Today, *all five sizes* of Bromo Seltzer from the 12¢ size to the giant \$2.00 package are cartoned on Redingtons . . . *the two largest on one adjustable unit.*

The operation is *simple, sure, speedy*: Cartons in collapsed form are stacked in a magazine on the machine . . . corrugated protectors are stacked in a second magazine. The *famous blue bottles* are brought

into the machine standing upright on the intake conveyor belt . . . *the Redington* then transfers the bottles from the belt and places them in a horizontal position in the conveyor's pockets. A *corrugated protector* is then fed, and placed around the bottle . . . the carton meanwhile is formed . . . the bottle and corrugated protector are inserted . . . and the carton is closed by gluing the end flaps. Machines for smaller sizes *do not* require corrugated protector mechanism but place circular over the *top* of the bottle.

Another example of Redington ability to supply high-speed, efficient packaging equipment for practically every type and size in cartoned products; *another reason* why post-war planners are saying, "If It's Packaging, Try Redington First."

F. B. REDINGTON CO., (Est. 1897) 110-112 So. Sangamon St., Chicago 7, Ill.

REDINGTON

PACKAGING MACHINES

FOR CARTONING • WRAPPING • SPECIAL PACKAGING

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00 per
scrip-
945 by
ntance



Good Advice . .

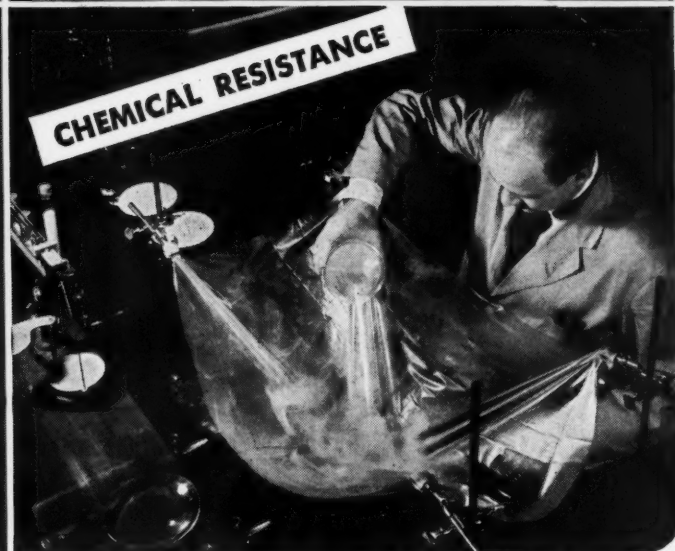
for all of us . . at times.

But we have never talked even half enough about the satisfaction you will enjoy by specifying

**FOOD PROTECTION
PAPERS**



**KALAMAZOO VEGETABLE PARCHMENT COMPANY
PARCHMENT • KALAMAZOO 99 • MICHIGAN**



With **Geon** it's the combination of properties that counts

ONLY three important properties of products made from GEON polyvinyl materials are shown here. They're three of *more than 30* distinct properties that may be had in an almost unlimited number of *combinations*—and each combination may be designed to meet a certain specific set of service conditions.

What properties do you need in your packaging material? Resistance to air, aging, sunlight, heat, cold, abrasion, foods, acids, alkalies? Do you want it taste-

less, non-toxic, mildew resistant? Should it be flexible or rigid? Transparent or opaque? Clear, brilliantly colored, or delicately pastel? You can call on these and many other unusual—in some cases, unique—properties to help solve your packaging problems.

Right now all the GEONS are subject to allocation by the War Production Board. Limited quantities can be had for experiment. And our development staff and laboratory facilities are available to help you work out any special problems or applications. For more complete information, write Department LL-2, Chemical Division, The B. F. Goodrich Company, 324 Rose Building, Cleveland 15, Ohio.



CHEMICAL DIVISION
THE B. F. GOODRICH COMPANY

324 ROSE BUILDING • CLEVELAND 15, OHIO



On the Beam

Since 1889 we have always sought to develop the art of glass making to the highest practical point. Strict insistence upon precision and accuracy . . . painstaking attention to the most minute details . . . constant checking and rechecking of methods and workmanship . . . these are the principles which have constantly guided Carr-Lowrey operations.

The troubles and difficulties of the wartime years have caused no deviation from this policy. So, if you are quality-minded about glass, consult with us regarding your postwar packaging requirements. You'll find that Carr-Lowrey's methods and standards are still ON THE BEAM.



Factory and Main Office: BALTIMORE, MD. • New York Office: 500 Fifth Avenue • Chicago Office: 1502 Merchandise Mart



Arrow enters its fourth year of service in the production of boxes which hold the medals for the heroes in our Armed Forces. And Arrow is proud that, throughout these years, it has maintained consistent leadership in serving this need of our Army and Navy.

Arrow

BOXES AND DISPLAYS

ARROW MANUFACTURING COMPANY, INC., 15TH & HUDSON STS., HOBOKEN, N. J.





Sure, miracles are around the corner, BUT—

When you get right down to it, the coming super-duper vacuum cleaners will still be used on the same, familiar rugs . . .

The "miracle" postwar cars will continue to take people to the same, old familiar haunts . . . the amazing, new home laundries will still do the family wash.

These products will do the same things for people they always did. BUT—with this important difference—they will do them better, more efficiently, more economically.

And that's a tip for your packaging business, too.

Will your products be packaged better? More efficiently? More economically?

Will your products be packaged more interestingly? Will people reach for your product in preference to the

one next to it? How will your containers really stack up in the new markets?

Many customers come to us with problems such as these. They want to keep their established brands ahead of competition. Many want a larger share of business. And, after all, who doesn't.

Why don't you get the latest available information?

Our experience in developing and providing the Services with new, ingenious containers may prove beneficial to you just as it has to many manufacturers. After all, devising new, better ways of packaging things has been our business for 43 years now.

Consult our representative or write to us direct. It may lead you to some stimulating, postwar ideas and plans.

AMERICAN CAN COMPANY

230 PARK AVENUE



NEW YORK 17, N. Y.



USE **PLIOWAX**

FOR A HOT-MELT COATING WITH MAXIMUM MOISTURE-RESISTANCE

FOR all packaging operations where hot-wax coatings are employed, there is nothing to compare with **Pliowax** — the new wax composition fortified with Goodyear's famed Pliolite moistureproof resin.

Tests prove that **Pliowax** gives far longer protection against deterioration from moisture loss, or moisture pick-up, than ordinary wax coatings. It is more flexible and has better adhesion, especially at refrigeration temperatures where straight wax coatings tend to stiffen, crack and flake off.

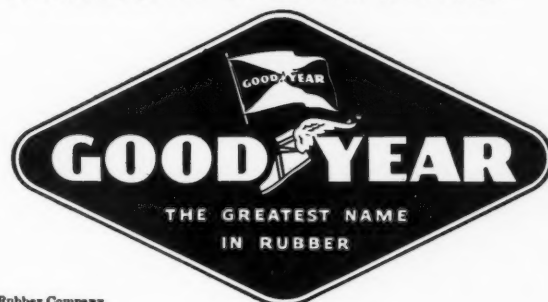
Pliowax can be applied directly to products like cheese, as it is odorless and tasteless. **Pliowax**-coated parchment paper gives standout protection to frozen foods, preventing dehydration and "freezer burn."

Pliowax has a strong affinity for all types of paper

from glassine to coarse-fibered stock; also for aluminum foil. It makes a permanent coating — won't rub off — and heat-seals, expediting packaging.

This superior wax coating is now available for civilian use. For complete information and samples, write: Goodyear, Plastics and Coatings Department, Akron 16, Ohio.

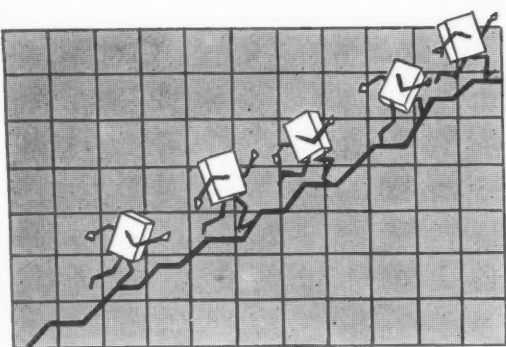
A PRODUCT OF GOODYEAR RESEARCH



Pliowax, Pliolite—T.M.'s The Goodyear Tire & Rubber Company



3



TOMORROW, THAT PERCENTAGE will climb even higher. More super-markets, more self-serve departments, more open shelf and counter displays will put a bigger than ever share of the selling job on your package.

4



GET THE HELP of Gardner-Richardson specialists in putting more point-of-sale magnetism in your folding cartons. Let us demonstrate that package effectiveness is not a matter of greater cost but of ideas.

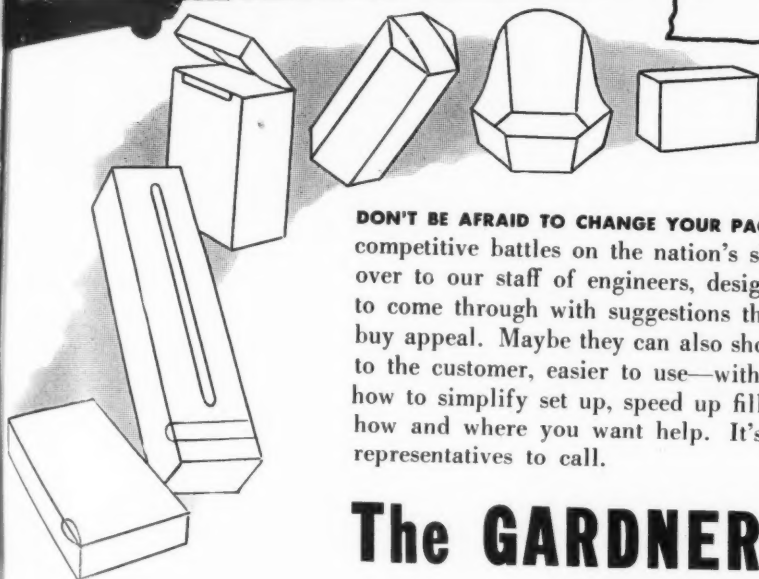
ld a folding carton user keep a magnet on his desk?



1
TO REMIND HIMSELF that one important way to get extra sales without extra sales expense is to see that his cartons have more point-of-sale "magnetism"...more power-of-attraction than his competitors'.



2
MILLIONS OF DOLLARS' WORTH of merchandise is sold, every year, on display, alone. In thousands of stores, impulse or "pick up" sales account for more than 50% of the volume rung up on the cash registers.



DON'T BE AFRAID TO CHANGE YOUR PACKAGE. "Sacred cows" belong in pastures, not in competitive battles on the nation's shelves and counters. Turn your folding cartons over to our staff of engineers, designers, merchandising experts. Put it up to them to come through with suggestions that will give your folding cartons more eye and buy appeal. Maybe they can also show you how to make your cartons more attractive to the customer, easier to use—with a lock top or pouring spout, for instance. Or how to simplify set up, speed up filling machine performance. Write, today. Tell us how and where you want help. It's yours, without obligation. Or ask one of our representatives to call.

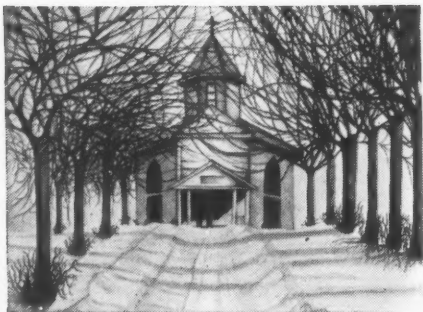
The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard

MIDDLETOWN, OHIO

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

FEBRUARY • 1945



HAVEN OF PEACE
Joseph R. Eberle, Age 17.



SNOW VALLEY
Frank R. Caruso, Age 16.



MIST OVER THE MARSHES
Nick Voglein, Age 17.



TAFFY APPLE SEASON
Mozelle Thompson, Age 17.



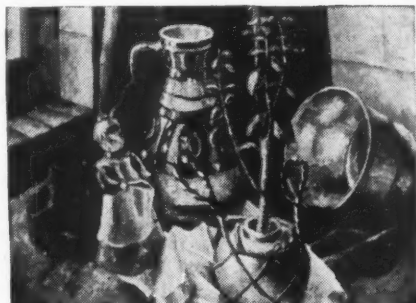
STREET SCENE
Judy Brody, Age 16.



GIRL WITH FAN
Bily Snel, Age 17.



SHIPROCK
Edward Carl, Age 20.



STILL LIFE
Margaret Matusiewicz, Age 18.



THE REWARDS OF LIFE
Ronald Fritz, Age 17.

Collector's Item of Tomorrow . . .

Last summer, the Ingersoll Art Award Contest for high school students was held under the auspices of the Women's National Institute. The best entries were selected by a jury of prominent artists, awarded more than two hundred cash prizes, exhibited all over the country. Now the Contest sponsor, The United States Time Corporation, has published in a 1945 calendar the twelve pictures which took Grand Awards . . . the work of seventeen year olds that for technical skill and sophistication outshines many a standard collection, forecasts coming figures in native art.

E-F was proud to produce this distinguished calendar, has held out a few copies (with permission) for connoisseurs...The calendar, incidentally, is not only fine art, but also a typical instance of E-F fine reproduction by the best peacetime standards . . . If you would like one, let us know.

Einson-Freeman Co., INC.

Youthful Lithographers

Starr & Borden Aves., Long Island City, N.Y.



SUNDAY AFTERNOON Arno Sternglass, Age 17

← CARNIVAL NIGHT Joyce Olson, Age 17.

WINTER MORNING Daniel Calabrese, Age 17.→



LUMARITH* PLASTICS

*present the case
for beauty*



THEY ARE INSPIRING new ideas in cosmetics container design . . . They are showing the way to more economical production . . . They are demonstrating how the inexpensive, expendable cosmetics container can be beautiful, smart and sales-appealing.

Lumarith is an old name in the cosmetics industry. Recently these versatile materials have served as alternates for war-scarce metals in many new applications. These newer roles are increasing as packaging stylists develop designs that take full advantage of Lumarith's unique characteristics of extreme lightness, superb color range, transparency and easy moldability.

The Lumarith molded container carries "lightly" in the handbag. Its chipproof surface actually improves with handling. The jade-like "feel" is

inviting in all seasons.

Lumarith plastics are adaptable to high-speed, multiple-cavity injection molding. Molded surfaces require very little finishing and polishing. Intricate designs, raised or impressed lettering and close fitting threads are readily molded. The toughness of Lumarith provides strength without bulk and makes thin cross sections practical. You are invited to consult the technical staff of the pioneer plastics producers for specific information relating to your manufacturing problems. Celanese Plastics Corporation, a division of Celanese Corporation of America, 180 Madison Avenue, New York 16, N.Y.

A Celanese Plastic*

In what post-war package
will you find all 3 advantages?



TRANSPARENCY... that keynotes the trend in modern retail selling . . . that permits a product to be its own best salesman . . . that capitalizes on the expanding growth of self-service, where emphasis is placed on product display. Post-war consumers will insist on choosing with their eyes. Transparent Du Pont Cellophane permits a product to take advantage of the greatest selling asset—visibility.

PROTECTION... sufficient to protect original quality from point of manufacture right through to point of use. Today, moistureproof Du Pont Cellophane is doing a war job safeguarding rations, medical supplies and armament parts for the fighting fronts in all parts of the world—striking evidence of its high protective value.

LOW COST... and the whole trend of post-war planning is toward lower distribution costs. Packaging costs must

be kept in line. Since the introduction of Du Pont Cellophane, twenty price reductions have helped to make it a definite packaging economy in terms of the job it will do. Additional packaging economy is offered by the efficient performance of Cellophane on automatic wrapping machines.

Back of every sparkling square inch of Du Pont Cellophane stands

Du Pont research, constantly at work to develop and improve types of packaging film for greatest efficiency.

We hope the day will soon come when there will be sufficient Du Pont Cellophane to meet all your requirements.

E. I. du Pont de Nemours & Co. (Inc.), Cellophane Division, Wilmington 98, Delaware.

DuPont Cellophane

Shows what it Protects—at Low Cost



BETTER THINGS FOR BETTER LIVING...THROUGH CHEMISTRY



For

PROTECTION

or

ATTACK

*T*he Kimble onion skin tubes at the left are very familiar as containers of antiseptics for treating minor injuries. ★ ★ ★ The tubes at the right, which look so similar, were developed by Kimble technologists to meet very particular war requirements. Millions of these tubes are playing an essential but undisclosed part in inflicting severe injury on the enemy... another instance of Kimble skill meeting enormous specialized demands.

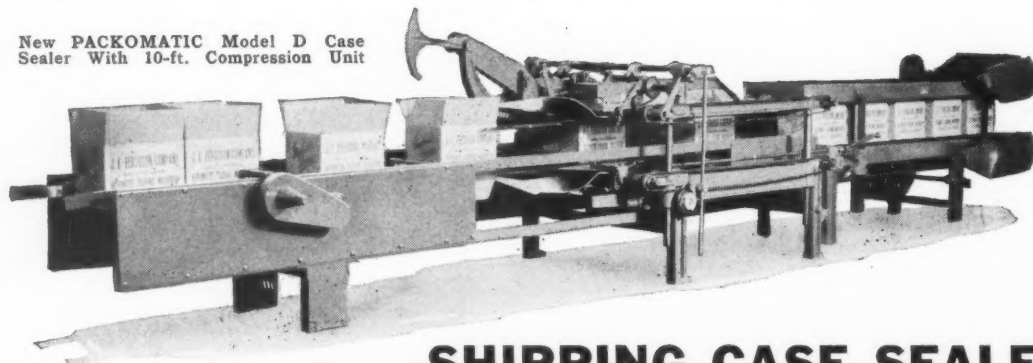
KIMBLE *Glass* **CONTAINERS**

For Assurance

• • • *The Visible Guarantee of Invisible Quality* • • •

HERE'S THE New Packomatic

New PACKOMATIC Model D Case
Sealer With 10-ft. Compression Unit



SHIPPING CASE SEALER

To Help You Speed Products to Market

IT'S NEW . . . It's improved . . . It's streamlined in design, workmanship, and finish—the NEW PACKOMATIC Model D Shipping Case Sealer, for which orders are now being accepted for later delivery.

PACKOMATIC CASE SEALERS are furnished for automatics sealing of both tops and bottoms on one machine—or for top-sealing or bottom-sealing only, if desired. Portable or stationary models are available . . . adjustable to a wide variety of case sizes to handle regular corrugated or fiber shipping containers at various speeds required.

You'll want to learn more about the NEW PACKOMATIC—also about other PACKOMATIC packaging equipment designed out of years of experience in helping America's top-flight enterprisers develop methods and machinery for speeding their products to market.

Case Imprinters . . . Case Sealers . . . Volumetric Fillers . . . Net Weight Scales . . . Carton Making Machines . . . Dating (Coding Devices) . . . Auger Packers . . . Paper Can Tube Cutters . . . Paper Can Tube Gluers . . . Paper Can Shrinkers . . . Paper Can Cappers . . . Paper Can Setup Conveyors . . . these are but a few of PACKOMATIC'S many quarter-century contributions to better packaging . . . more economical and more effective package handling.

Requests for information in regard to PACKOMATIC experience and equipment entail no obligation to buy. Write, wire, or phone—depending upon urgency of situation—or consult classified directory for nearest PACKOMATIC office.

- Fully automatic
- Cases squared automatically
- Cases fed automatically
- No operator required
- Operates at any desired speed
- Heavy, sturdy construction
- Trouble-free mechanism
- Easy to keep clean
- Low maintenance cost
- Positively controlled glue-strip saves upwards of 50% adhesive
- Top and bottom belt-driven

PACKOMATIC

PACKAGING MACHINERY

J.L. FERGUSON CO. JOLIET, ILL.

NEW YORK CHICAGO BOSTON CLEVELAND DENVER LOS ANGELES SAN FRANCISCO SEATTLE

**SPARKLING,
GLITTERING**



Beauty

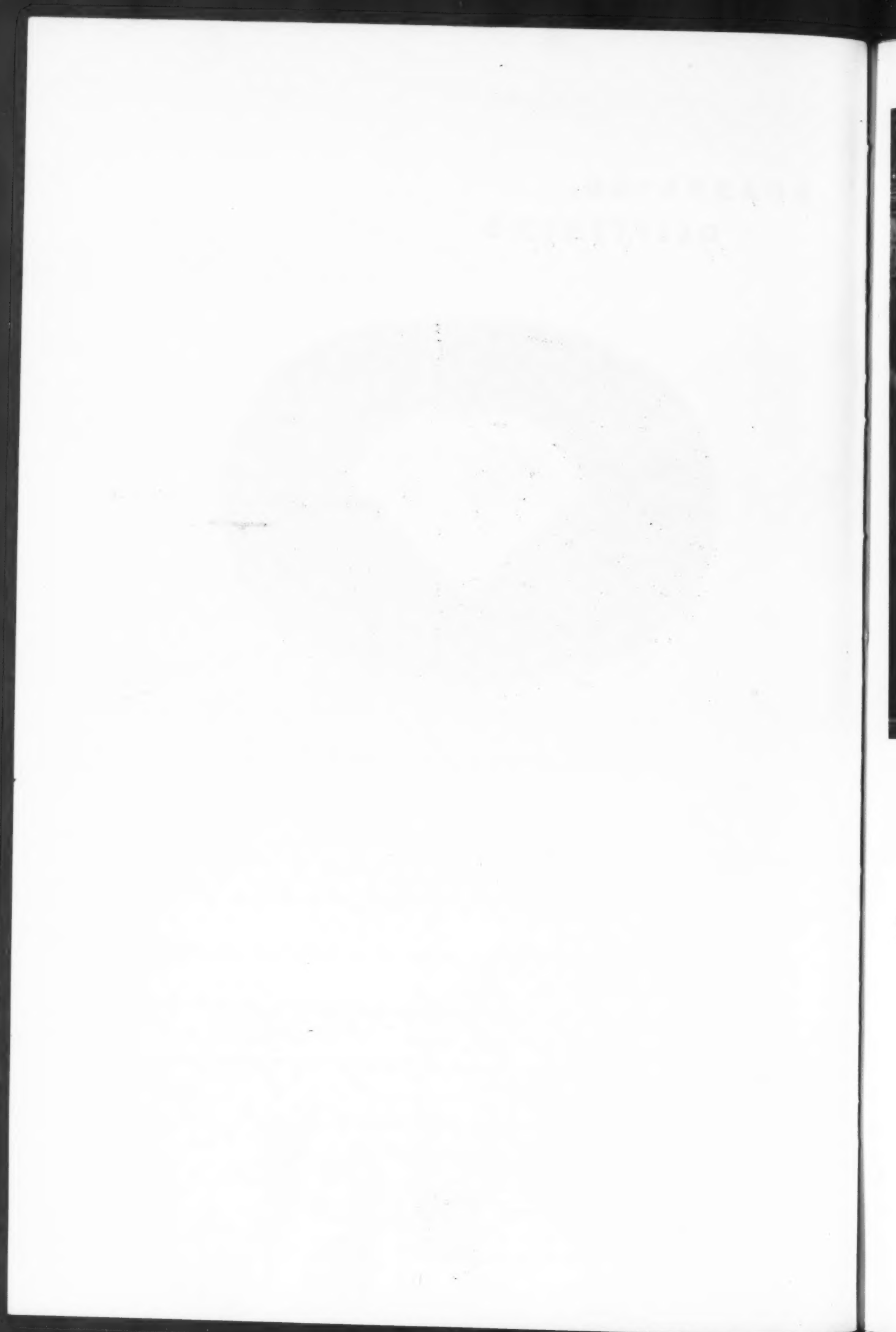


Champion Kromekote

The glorious brilliance of Champion Kromekote creates an instant bond between package and customer. This rich, glossy box wrap and label paper bespeaks the quality of your finest products, and can help promote your present plans for selling more goods postwar. A favorite for packaging and labeling jewelry, perfume, candy, pens, cosmetics, food, beverages, stationery. Production of Champion Kromekote now is limited, but soon will be available in quantities. This is the time to consider Champion Kromekote for dressing up your postwar merchandise.

THE CHAMPION PAPER AND FIBRE COMPANY
HAMILTON, OHIO





Smack IN THE CENTER OF THE POST-WAR STAGE



Your product will rate an "orchid"

Put your product in a SHOWBOX and make a grand entrance on the post-war stage, the moment the big show starts, and the curtain is raised on the most competitive era in American history.

The audience has been waiting a long time. Hundreds of new performers will compete for the spotlight.

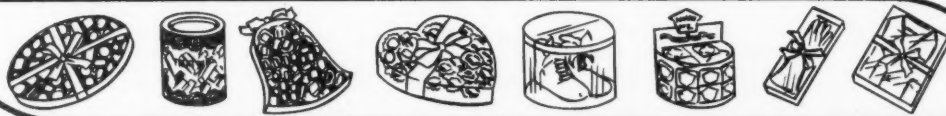
It's going to take your best product development plus merchandising-showmanship and attractive packaging to win top billing in the era ahead.

Don't wait for the middle of the second act. Be smack in the center of the post-war stage when the curtain goes up... by planning your SHOWBOX now.

All our facilities are still "at-war" producing paper bags, water-proof and weather-proof case liners and the like. But we are preparing for peace. Let us help you do the same.

SHOWBOX

We are ready to design your SHOWBOX now, quote prices, book your order and start production as soon as material is available.



DIVISION OF **CENTRAL STATES PAPER & BAG CO.**

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520 N. Michigan Ave.

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GAIR BY AIR

**SAVES WEIGHT—SAVES SPACE
SAVES PACKAGING COSTS**

To the land of the Totem Poles —
flying time's from dawn to dusk.
Because weight is a first considera-
tion Gair containers and corrugated
boxes play a vital part in overland
and overseas shipping now and for
the future. Gair by Air means max-
imum cargo at minimum tonnage.
Write for bookler "Air Cargoes."



For large users—booklet on the Palletized Load,
illustrated with official photographs.

**SAVE WASTE PAPER
FOR WAR PRODUCTION**

ROBERT GAIR COMPANY, INC., NEW YORK • GAIR COMPANY CANADA LIMITED, TORONTO
Folding Cartons • Box Boards • Fibre and Corrugated Shipping Containers



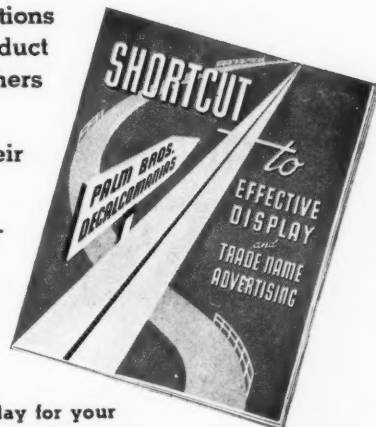
CAMOUFLAGE IS GOOD...

but not for your nameplates

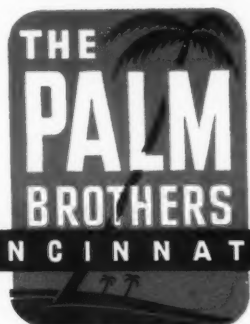
Call attention to your nameplates (trademarks, company name, instructions for product usage) — get that extra sales lift that goes with excellent product identification — all through the eye-catching appearance of Palm Brothers Slide-Off Decals.

You'll marvel at their simplicity of application — you'll be amazed by their low cost.

There's a decorative Palm Brothers Decal for almost every known surface — with proved properties to give you the utmost in satisfaction — even under the most unreasonable of performance requirements.

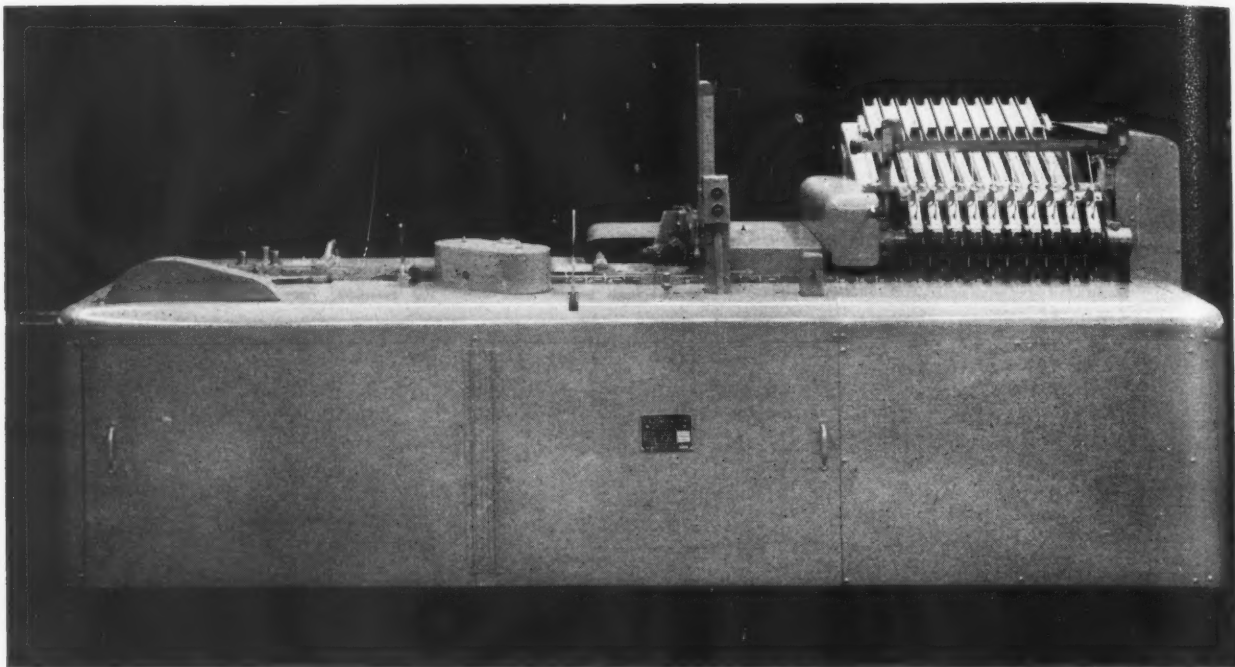


Write today for your
free copy of new
Bulletin No. 916.



Decalcomania Co.

C I N C I N N A T I . . 1 2 . . . O H I O . . U . S . A .



By far the majority of razor blades made in the world are counted and cartoned on the JONES CONSTANT MOTION CARTONER because:

ACCURATE COUNT INSURED—A broken blade, a blade without a wrapper or "no blade" is automatically detected and indicated. It is impossible for a "short count" carton to pass through the machine. The mechanisms handling the blades and cartons are as infallible as a sewing machine.

SPEED—100-200 cartons per minute.

LONG LIFE—All motions are so smooth, short and unhurried that wear has been reduced almost to the vanishing point. We can show you machines 14 years old running as efficiently as the day they were installed.



Your own packaging problem may not resemble the one outlined above. It may be simpler or it may be even more complex. Whatever the nature of your product, the JONES CONSTANT MOTION CARTONER will turn it out more rapidly, and with a better package, than any other cartoning machine.

R. A. JONES & COMPANY, INC.

P. O. BOX 485

CINCINNATI, OHIO



Exquisite Miniature

PERFUME BOTTLES and VIALS

of crystal-brilliant, hand blown glass. Available in many stock designs, or custom styled to meet your individual packaging requirements.

ALL FEATURING OUR EXCLUSIVE, PATENTED
LEAKPROOF, AIRTIGHT
APPLICATOR STOPPER.



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GLASS INDUSTRIES, INC.

Designers and Manufacturers

10 WEST 33RD ST., NEW YORK 1, N. Y.



Infantry Sergeant bites his tongue as he heaves a grenade at Jap pillbox.

FOR THE HARDEST JOBS



IN warfare it's invariably the Infantry that's chosen for many of the hardest jobs. The airforce may bomb, the navy blast, artillery lay the barrage, and tanks may lead the way, but the tough, tireless foot-slogger is the one who usually wrests final victory from the enemy.

And so it is in the field of packaging. Sheffalloy Sheffield Process Tubes are usually chosen for the hardest jobs. Packagers have been quick to appreciate the *extra toughness* of these better tubes . . . a pliable strength that only our exclusive Sheffield Process can achieve. Possibly your product may be sold quicker and easier in Sheffalloy Sheffield Process Tubes. Ask for complete information, and details about the series of over 50 VINICOTE Interior Tube Coatings developed by our research staff!

NEW ENGLAND COLLAPSIBLE TUBE CO.

3132 S. CANAL STREET, CHICAGO 16 • NEW LONDON, CONN. • W. K. SHEFFIELD, V. P., 500 FIFTH AVENUE, NEW YORK 18
THE WILCO COMPANY, 6800 MCKINLEY AVE., LOS ANGELES 1

COMING BACK AFTER VICTORY—

Crack-Proof "Overcoats"

FOR FROZEN FOODS!

THE fresh vegetables, fish and meats pictured below are samples of what frozen food packagers can accomplish now. After Victory, they'll be able to do even more.

One reason: Socony-Vacuum's famous microcrystalline waxes will be back from the war, available in volume for civilian packaging.

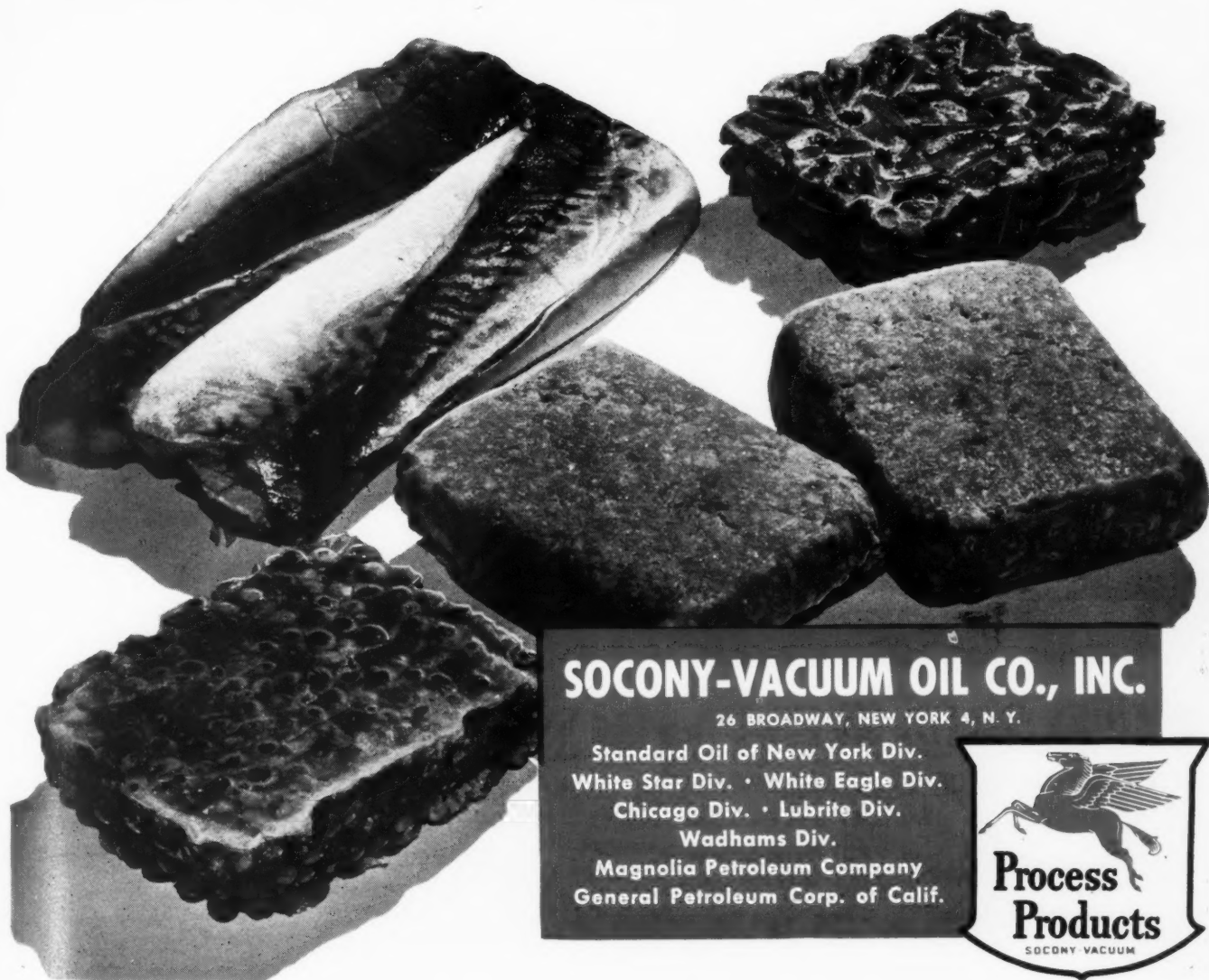
These specially developed products form tough, durable wax "overcoats" for packages

that keep the moisture *in*, and the vegetables *fresh*. They remain flexible at low temperatures and stand up under rough handling.

Before the war, frozen food packagers were just beginning to discover the superior qualities of microcrystalline waxes. Post-war, they'll be able to realize the full benefits.


Ask your Socony-Vacuum Process Products representative for details.

Call in Socony-Vacuum Process Products Research and Service —



SOCONY-VACUUM OIL CO., INC.
26 BROADWAY, NEW YORK 4, N. Y.

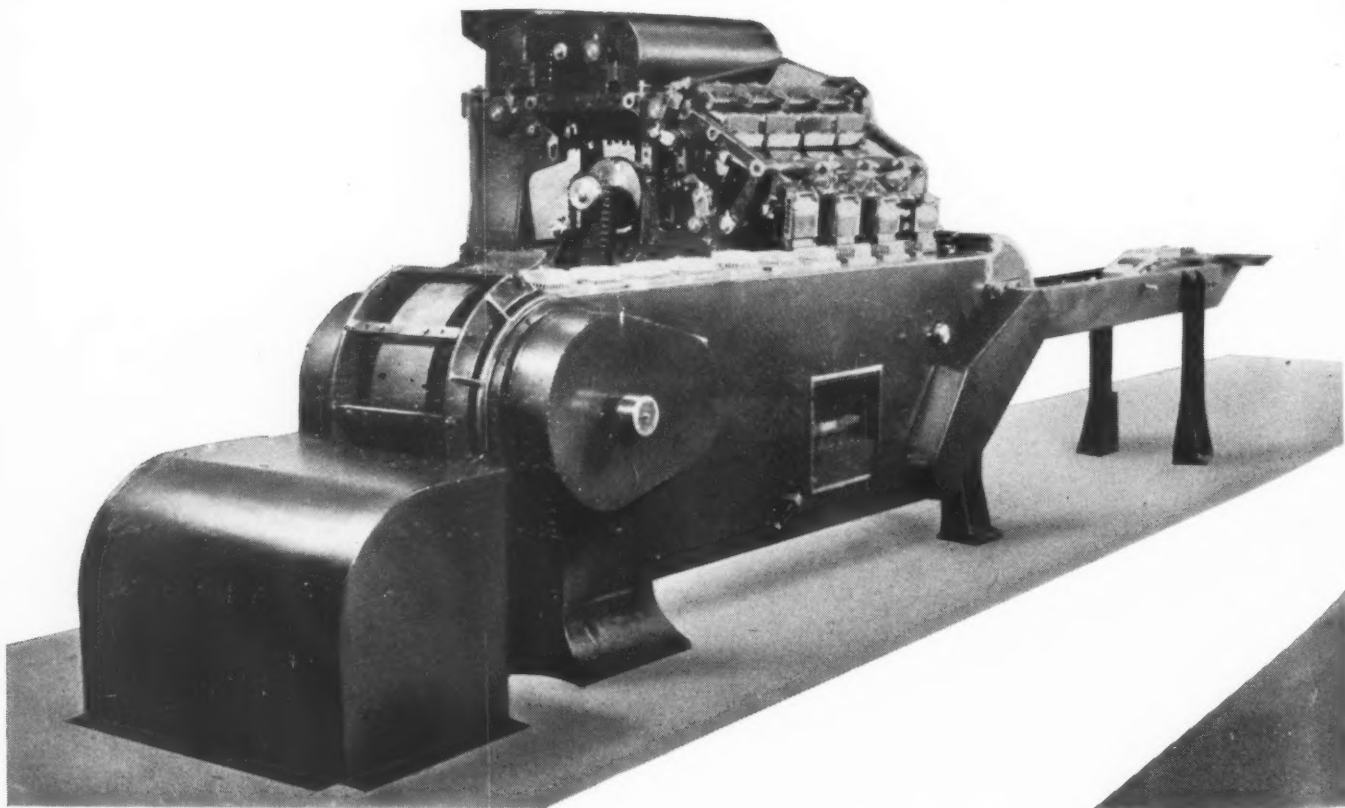
Standard Oil of New York Div.
White Star Div. • White Eagle Div.
Chicago Div. • Lubrite Div.
Wadhams Div.
Magnolia Petroleum Company
General Petroleum Corp. of Calif.



(MECHANICAL) HANDS ACROSS THE BORDER

This is a packaging machine but it does a job which you will probably never want performed in your plant. We built it for the Canadian government. It handles loose bullets, unscrambles them and packs them neatly into cartons. We present it not as a machine we would like to sell but as an example of Standard-Knapp machine development and machine building service. Because of our mastery of basic packaging machine

principles, we were able to design and build a number of pieces of equipment for both United States and Allied governments which expedited war production and eliminated manpower requirements. Soon, again, we hope to turn our skills to peace-time pursuits. We will resume building our famous case packers and case sealers for all industries and designing and building special packaging equipment as well.



STANDARD-KNAPP CORP.

MANUFACTURERS OF CASE SEALING, CASE PACKAGING, AND CAN LABELING MACHINES

FACTORY and GENERAL OFFICES — PORTLAND, CONNECTICUT

570 Lexington Avenue
NEW YORK 12, N. Y.

430 S. San Pedro Street
LOS ANGELES 13, CALIF.

221 North LaSalle St.
CHICAGO 1, ILL.

3224 Western Avenue
SEATTLE, WASH.

Windsor House, Victoria Street, LONDON, ENGLAND

145 Public Square
CLEVELAND 14, OHIO

1208 S.W. Yamhill Street
PORTLAND 5, OREGON

300 Seventh Street
SAN FRANCISCO 2, CALIF.

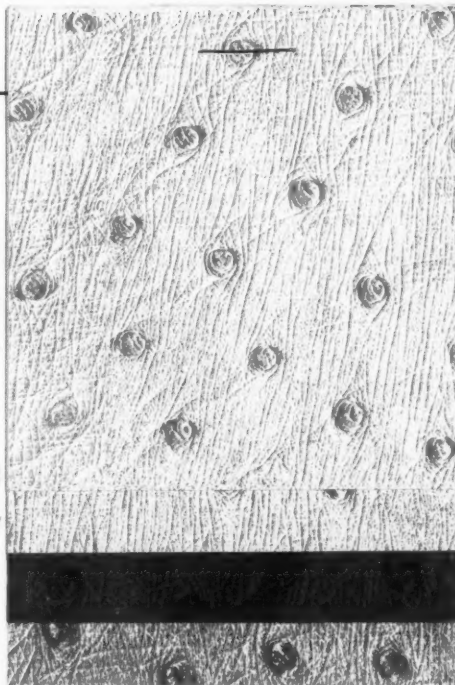
Paul Brown Building
ST. LOUIS 1, MO.



**THIS IS ONE OSTRICH YOU
SHOULD TAKE ADVANTAGE OF!**

Introducing "Ostrich"—a design that is new and different in packaging papers. This distinctive textured pattern, which beautifully simulates expensive ostrich hide, comes in a variety of colors.

"Ostrich" will let your package take its head out of the sand and sit up for increased consumer attention *and sales.*



KUPFER BROS. CO.

MANUFACTURERS OF SURFACE COATED PAPERS

ADDRESS N. Y. 4, ASTOR PLACE

EST. 1845

BOSTON

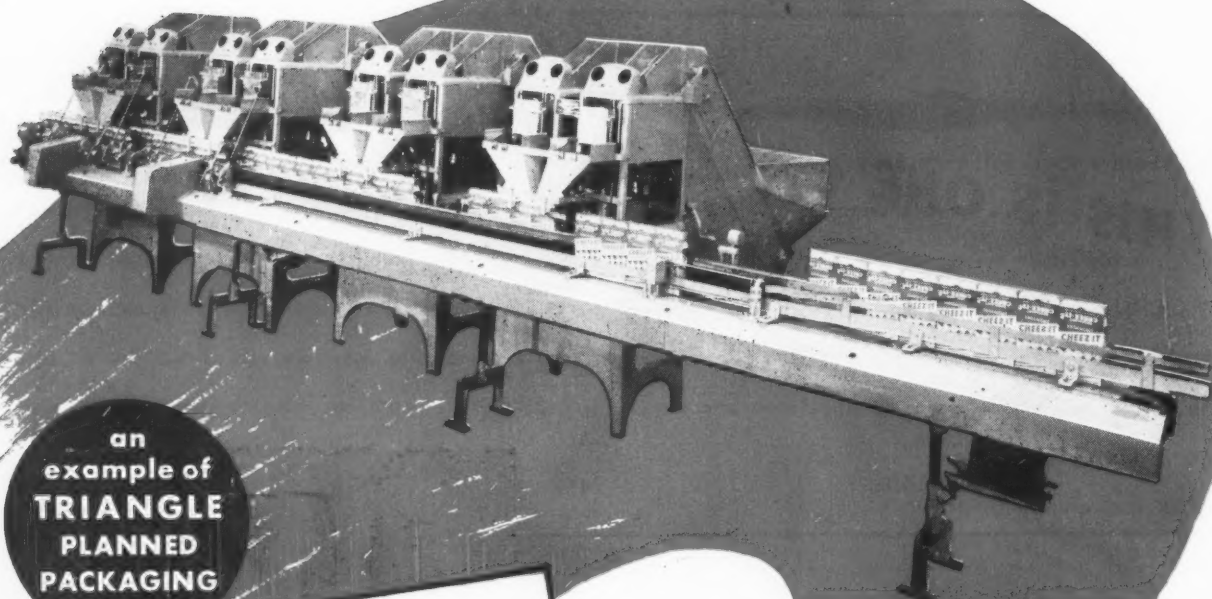
RICHMOND

PHILADELPHIA

KUPFER BROS. PAPER CO.—Chicago

145 West Hubbard Street

BRING YOUR PACKAGING DEPARTMENT *Into the Family!*

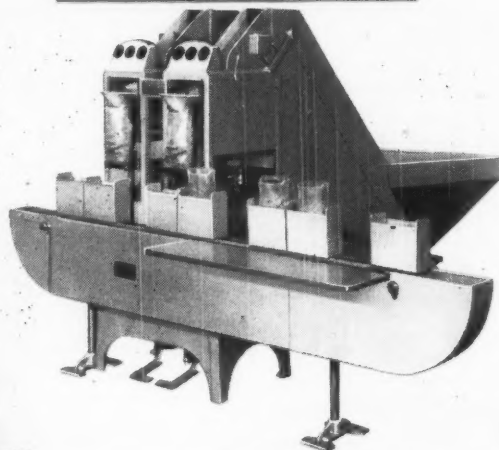


The packaging department in many a modern, well equipped plant is a proverbial orphan. The rest of the plant may be encumbered to secure maximum productive efficiency, yet makeshift packaging causes low output, excessive costs, and inefficient use of manpower.

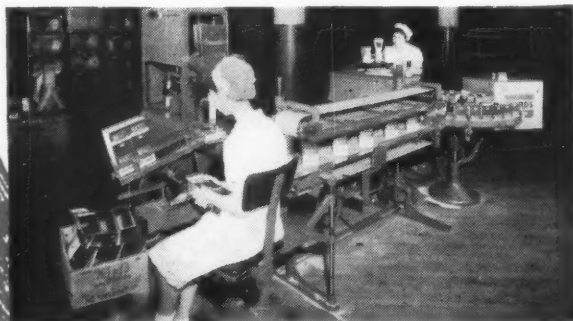
By contrast, the Elec-Tri-Line system shown above accurately weighs and fills 70 to 80 packages of cookies or crackers per minute! One manufacturer, operating four of these lines, 20 hours per day, reduced his packaging costs enough to return his investment in only four months.

The Triangle engineering department is prepared to show you how to plan your packaging department in order to increase output, reduce costs, and alleviate manpower problems. Bring your packaging department into the family—utilize full productive capacity and obtain maximum efficiency in your plant!

Write for literature. For recommendations, send sample filled packages and state production required. No obligation.



Model G2C Elec-Tri-Pak with Model O Pocket Conveyor—tops for range, variety and versatility. Capacity—14 to 25 weighings per minute.

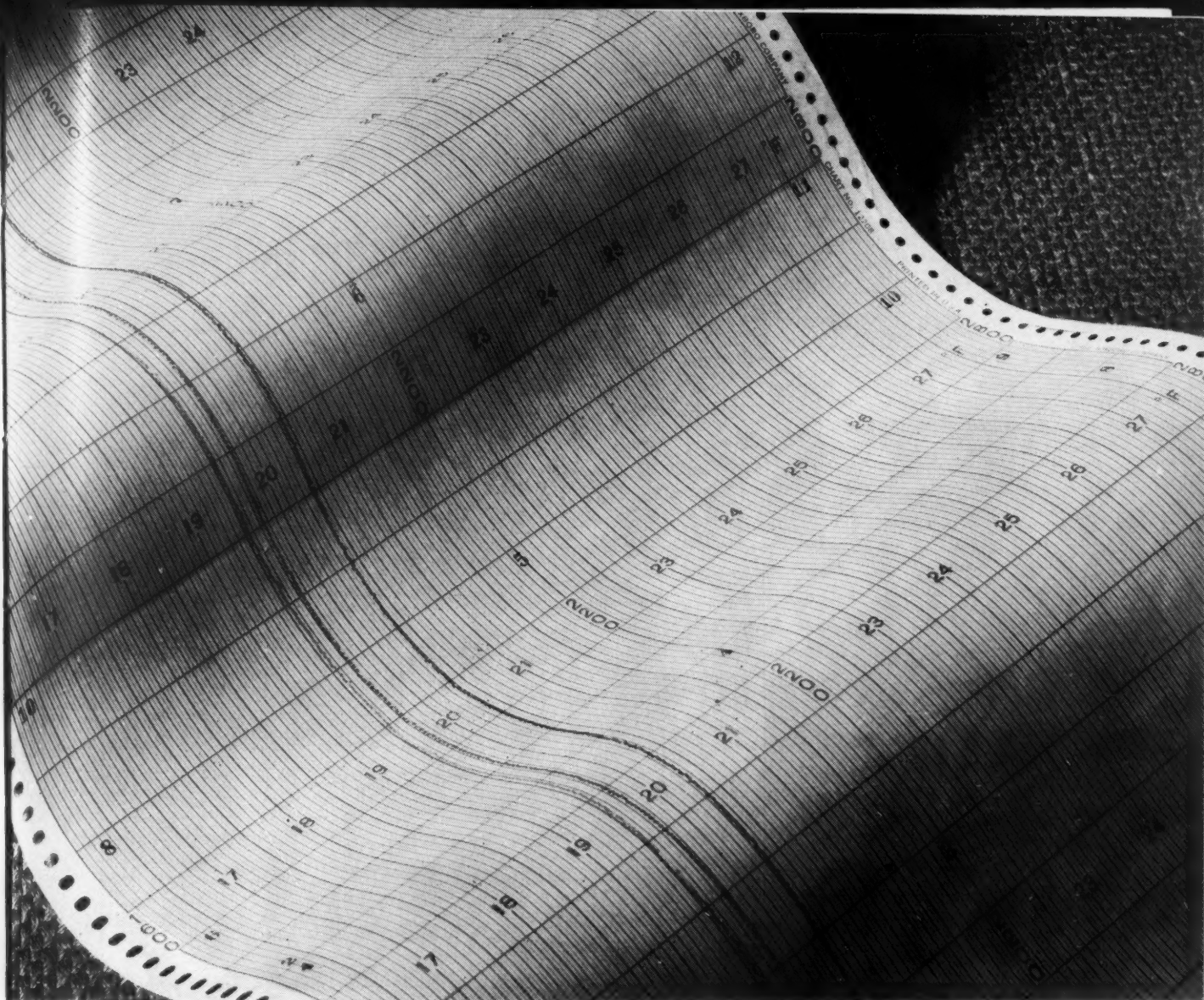


Packing crumbs. Weighing, filling, and carton sealing with a Triangle Elec-Tri-Pak Weigher, Carton Sealer, and Collector Table.



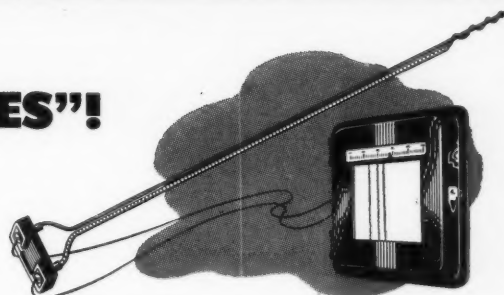
TRIANGLE PACKAGE MACHINERY CO.

907 NO. SPAULDING AVENUE, CHICAGO 51



A GLASS FURNACE HAS "NERVES"!

*Another of research's contributions
to the making of better glass*



FOR centuries it was difficult for glassmakers to produce long runs of consistently high-quality glass. They had no way of accurately determining or controlling the very high temperatures in a glass melting furnace.

Shortly before the turn of the last century, research men in Armstrong's Millville Plant were among the first to succeed in equipping their glass furnaces with "nerves" as sensitive as those in your finger tips—"nerves" which provide accurate records of furnace temperatures.

Today, these "nerves" are made of two wires of different metals—frequently rare or noble metal alloys—welded together to form a thermojunction. When heat is applied to this thermocouple, a flow of electrical

current results, and accurate measurements of temperature are indicated on recording instruments.

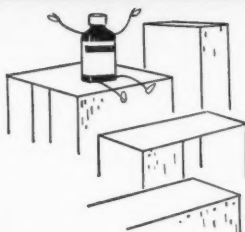
Every bottle made in each of Armstrong's glass furnaces today is subject to the control of at least nine of these "nerves," which are connected to a device that makes a continuous, permanent record of temperature. In addition there are many more "nerves," or thermocouples, which record temperatures of the glass at various stages in the manufacture of each bottle.

Armstrong's continuing reputation for top-quality glass is due to the precise temperature control thus afforded and to many other improvements in glass making pioneered and developed by Armstrong's glass chemists, physicists, and engineers.

Send for your free copy of "Men and Glass," which contains many additional details about the making of fine glass. Write to the Armstrong Cork Company, Glass and Closure Div., 5902 Prince St., Lancaster, Pennsylvania.

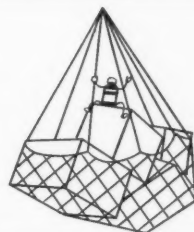


Here's a hot tip, Big Boy



Listen, soon I'll be headed overseas to a battle front.

I'll get handled, rehandled, and jounced around plenty before I get there.



But this I'm sure of... my cap will stay on as tight as if I'd floated over on a cloud.



Experience with medical supplies has proved Alseco Rolled-On Seals seal medical supplies tightly without a secondary seal. Get wise. Get R-O sealed.

It's a fact... Alseco R-O Seals, unassisted, have been found equal to the job of keeping medical supplies tightly sealed right up to the front lines. Isn't a closure that can come through on that tough job a closure you should consider for your packages?

Trade Mark Reg.



U. S. Pat. Off.

ALSECO SEALS AND SEALING MACHINES

ALUMINUM SEAL COMPANY • 1345 THIRD AVENUE • NEW KENSINGTON, PENNSYLVANIA
DIVISION OF ALUMINUM COMPANY OF AMERICA

TAILOR MADE OF
ALCOA ALUMINUM

Will the SINGLE-USE CONTAINER Play a Part in Your Post-War Plans?

MAYBE you've never thought of packaging your product in an individual, Single-Use Container. Perhaps you've never seen one that exactly suited your needs. If so, now's the time to take a look at the SUN TUBE UNITAINER!

For the UNITAINER is more than just a container. To several successful companies, it has provided a better way to merchandise their products, to increase their sales.

UNITAINERS have proved in dollars and cents that many a product in a large multiple-use container is often a better seller in a Single-Use Container. Folks like Unitainers for their simplicity and convenience.

UNITAINERS offer these special advantages:

- 1 Hold individual, measured amount.
- 2 Assure against substitution and "counterfeiting."
- 3 Quickly opened, require no separate opener.
- 4 Hermetically sealed and non-refillable.
- 5 Protect against light and heat.
- 6 Reduce loss due to leaks and breakage.
- 7 Smart and attractive in appearance.
- 8 Reach the consumer in the original container.
- 9 Handy to use and completely sanitary.
- 10 Offer excellent means for sampling.

Consider the SUN TUBE UNITAINER for your post-war selling. Investigate the specific ways it can serve your product—help your sales plan—in the sharply competitive days ahead. Write or telephone our nearest office. We'll be glad to give you all the facts.

UNITAINER proves value for VITALIS!

UNITAINERS replaced stand bottles for VITALIS' barber trade before the war. Sales jumped to record highs. Result: VITALIS plans to use UNITAINERS for post-war business.



SUN TUBE UNITAINER

PRODUCT OF SUN TUBE CORPORATION • HILLSIDE, N. J.

CHICAGO 1, ILL.
James L. Coffield, Jr.
360 No. Michigan Avenue

ST. LOUIS 1, MO.
M. P. Yates
Arcade Building

ST. PAUL 1, MINN.
Alexander Seymour
615 Pioneer Building

LOS ANGELES 27, CALIF.
R. G. F. Byington
1260 North Western Ave.

ER
S?

You can't beat
CELLOPHANE
for quick-frozen foods
when properly fabricated

Odorless... and odorproof
Tasteless... flavor-saving
Moisture-vapor proof
Liquid tight... airtight
Heat-sealing... transparent

Quick-frozen foods keep better, taste better and sell better when packaged in Dobeckmun processed cellophane. The same qualities that protect these perishables work equally well for almost any product.

For some uses, single or duplex bags give the right answer. They're sized from ounces to gallons.

When you want super-protection, use "Tritect" wax-laminated cellophane that's extra-heavy and extra-tough and dead folding.

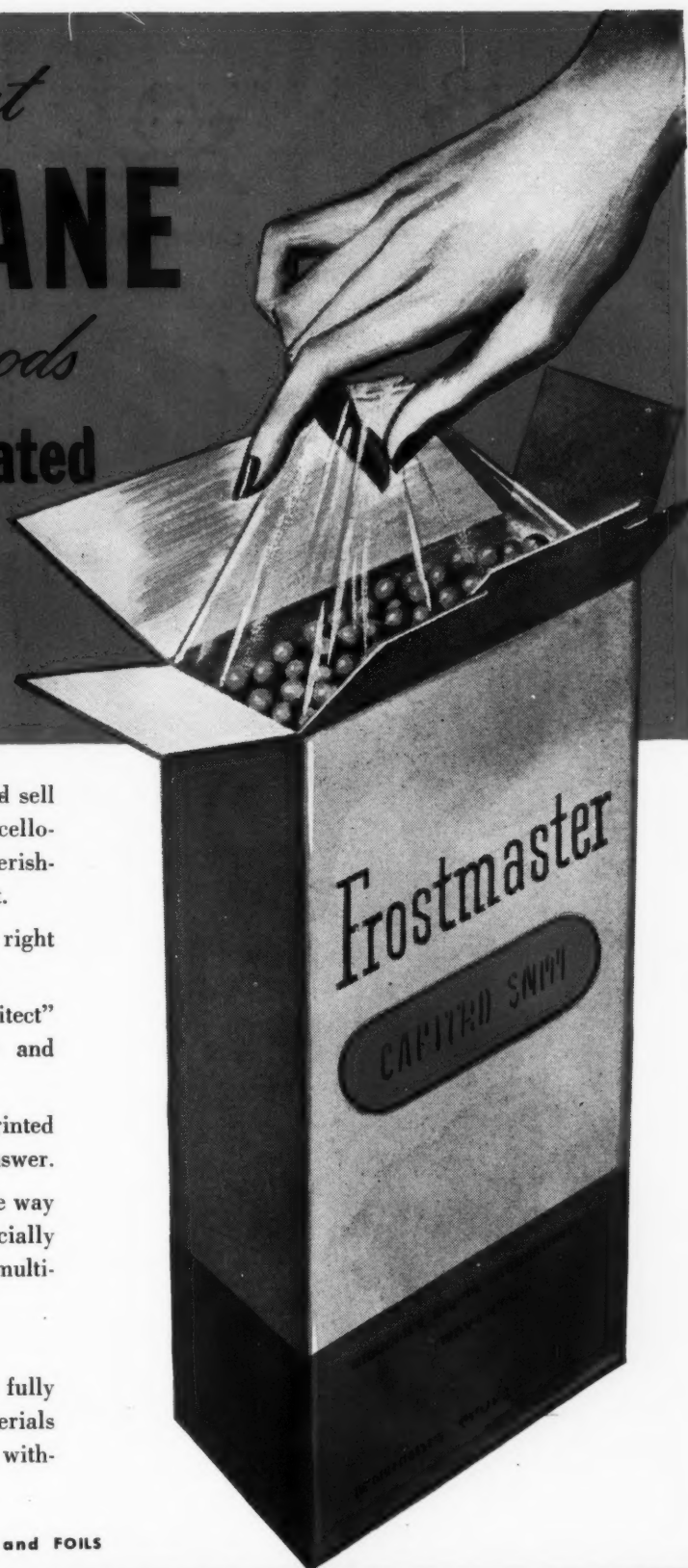
For volume users, a machine-applied printed cellophane wrapper may be a preferable answer.

These Dobeckmun specialties have shown the way in a wide variety of packages. They're especially "buy-appealing" when attractively printed in multi-colors.

AVAILABLE NOW

Our creative service and research facilities are fully available to help you to a head start when materials are eased. Ask us for samples and suggestions, without obligation.

CONVERTERS — PRINTERS — LAMINATORS of FILMS and FOILS



THE

DOBECKMUN

COMPANY

CLEVELAND 13, OHIO

WESTERN SALES HEADQUARTERS • SAN FRANCISCO 4, CALIF.

OFFICES IN NEW YORK, BOSTON, PHILADELPHIA, CHICAGO AND LOS ANGELES • REPRESENTATIVES EVERYWHERE



COFFEE, TEA, SPICES



CANDY, GUM



CHOCOLATE, COCOA



BLANKETS



VITAMINS



FILM



COLOGNES



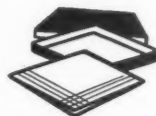
BELTS, ACCESSORIES



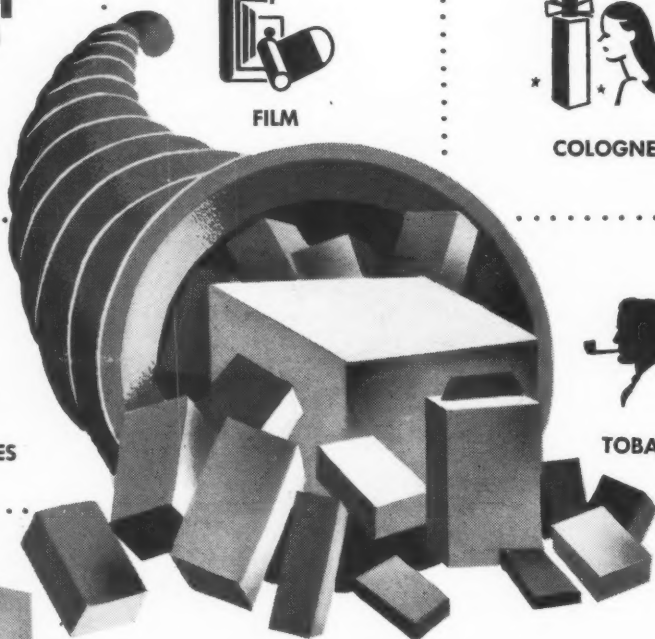
RAZOR BLADES



TOBACCO



HANDKERCHIEFS



ALL THESE GOOD THINGS...

will come in finer clay coated cartons

Most of these products are in limited supply today. But they will be back in the folding boxes that make them easy to pack, ship and merchandise.

Imagine them *without* packaging! How much waste there would be in storage, handling and use. It's a good idea now to be set on efficient design and styling. Rely on Ridgelo Clay Coated boxboard for the basic qualities you need . . . true-printing features, assurance of maximum varnish gloss, rigidity, a better carton than your competitor's at a price that makes little difference in over-all packaging cost.



Keep Doing Your Share
in the
Waste Paper Campaign



Make a lot of difference — for a little

MADE AT RIDGEFIELD, N. J., BY LOWE PAPER COMPANY

Representatives: Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago • H. B. Royce, Detroit
Gordon Murphy and Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Son, Inc., Philadelphia



To the East Indies go weapons and supplies of liberation—packed in paperboard packages of advanced design and unique protective features—many of which will greatly improve your own post-war packaging.

CONTAINER CORPORATION OF AMERICA
CHICAGO AND 19 OTHER CITIES



Dripping wet, Patapar keeps its strength and beauty



This sheet of Patapar* Vegetable Parchment was soaked in water for hours. Then out it came, intact—displaying all its original lustre and distinctive texture. Even when *boiled* Patapar keeps its strength and beauty.

Patapar resists grease, too

Grease or oil can be left on Patapar without penetrating.

Wrapped in Patapar, products with high grease content are kept fresh and appetizing.

179 types

Patapar is produced in many types or variations to fill a wide range of needs. For example, some types of Patapar are airtight. Other types are made for products which must have wrappers that allow them to "breathe". There are types to meet varying requirements of wet-strength, grease-proofness, opaqueness. All in all, 179 different types of Patapar have been perfected.

A few of Patapar's many uses

As a packaging material Patapar protects butter, meats, fish, cheese, ice cream, shortening. It is used for milk can gaskets, bottle hoods, box and can liners, bulk packaging units and for literally thousands of other purposes.

Complete printing service

Patapar's rich distinctive texture lends added beauty to the colorful effects of printing. Our plants are equipped with complete facilities for printing Patapar in one or more colors by letterpress or offset lithography.

Patapar Keymark



This little keymark is the nationally advertised symbol of wrapper protection. It can be included on printed Patapar at no extra cost. On your wrappers, it tells customers that you are giving your product the best possible wrapper protection.

* Reg. U. S. Pat. Off.

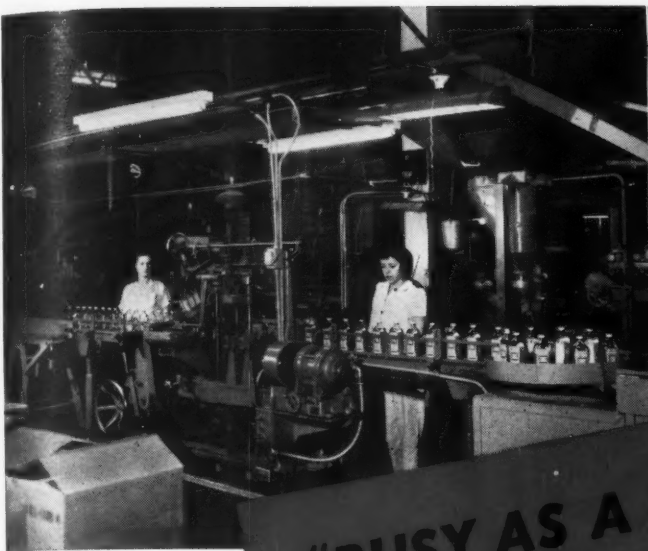
Paterson Parchment Paper Company, Bristol, Pennsylvania

West Coast Plant: 340 Bryant Street, San Francisco 7, California

Branch Offices: 120 Broadway, New York 5, N. Y.

111 West Washington Street, Chicago 2, Ill.

Headquarters for Vegetable Parchment since 1885

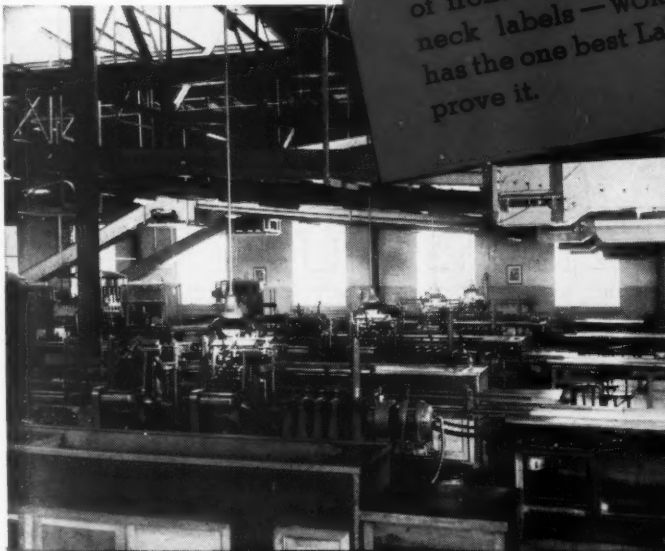


"BUSY AS A BEE-LINE"

WORLD Automatic BEE-LINE Straightaway Labelers got into production just in time to save overworked bottlers many a headache. Users tell us they don't know how they'd have gotten through the emergency without the BEE-LINE.

This WORLD welcomes round, square, flat, oval or panel bottles—conducts them swiftly, surely and gently in a bee line from start to finish, without traffic jams, detours or collisions. It's ideal for the modern light weight glass containers.

Whatever your future labeling calls for—full automatic or semi-automatic application of front or front and back body labels and neck labels—WORLD labeling headquarters has the one best Labeler for the job. Ask us to prove it.



**"YOU GET THE
BEST LABELERS
IN THE WORLD"**

ECONOMIC MACHINERY COMPANY

Builders of World Automatic and Semi-Automatic Labelers for Every Purpose

WORCESTER, MASSACHUSETTS

New York	Philadelphia	Pittsburgh	Chicago	San Francisco	Denver
Louisville	Salt Lake City	El Paso	Seattle	Portland	London
Montreal	Toronto	Winnipeg	Spokane	Vancouver	
Sydney, Australia		Wellington, N. Z.	San Juan, P. R.		



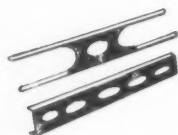
TAILOR-MADE PACKAGING

Many well-dressed men never know a tailor, for ready-made clothes fit them exactly.

But "well-dressed" packaging is not like that. Varying requirements of protection and eye-appeal, of production efficiency and economy, are seldom exactly met by "ready-made" packaging papers.

That's why Riegel makes over 230 different grades and countless variations — plain or printed, transparent or opaque, heat or glue sealing, heavy or light, laminated, embossed, colored, lacquered — completely Riegel made or in combination with other materials.

There is no need to "adapt" your post-war packaging to the limitations of standard materials. Outline your product's requirements and let Riegel do the rest.



*Airplane wingtip ribs
made of paper.*



*A quick-frozen dinner
complete from soup to
nuts in one package.*



*A bandage wrap that
seals itself.*

RIEGEL PAPERS

RIEGEL PAPER CORPORATION • 342 MADISON AVENUE • NEW YORK 17, N. Y.

126

Beetle

commands attention!



...and rings the cash register, too! Because lustrous plastic colors in any package add eye appeal that calls for more than a second glance...because plastic colors *invite* the closer inspection that turns casual shoppers into customers on the spot!

The richness of BEETLE* colors, the satin smoothness of BEETLE finish, make it a package that's lovely to look at, delightful to touch, and a pleasure to own. It radiates quality, *looks* expensive, yet costs amazingly little.

BEETLE is an *ideal* packaging material for many other reasons. Besides the endless range of permanent colors, it has the advantages of dimensional stability, chemical inertness, light weight, resistance to impact, wear, and

abrasion. This combination of qualities has made BEETLE a sales success in a host of other fields. Perhaps they can be put to work for your postwar sales.

As wartime demand slackens, BEETLE will again be available in a wide range of colors. Additional information on BEETLE, *the Plastic that's All Color in All Colors*, for your postwar packaging or design requirements, is yours for the asking. And your inquiry will receive prompt, experienced attention.

Cyanamid Plastics
Beetle · Melmac · Melurac · Urac · Laminac
AMERICAN CYANAMID COMPANY
 PLASTICS DIVISION
 30 ROCKEFELLER PLAZA • NEW YORK 20, N. Y.
*Reg. U. S. Pat. Off.





DRY LUBRICANTS
INSECTICIDES
FUNGICIDES
POWDERS

any of these products can be enhanced by utilizing the extra convenience of CLEARSITE resilient containers.

Fitted with a special closure your CLEARSITE container serves as a dispensing medium, ejecting desired quantities by finger-tip pressure on the resilient walls of the CLEARSITE container.

and **CLEARSITE** is SHATTERPROOF and SEAMLESS

so you have extra protection, too, against accidental breakage, or careless handling. Do you know of ANY other type of container which will provide this consumer-convenience feature as well as CLEARSITE does?



CELLUPLASTIC CORPORATION

40 AVENUE L

NEWARK, N. J.

WEST COAST REPRESENTATIVES: CONTAINER SERVICE CO., 1266 North Western Avenue, Los Angeles 27, Cal.

Leslie
Brooks

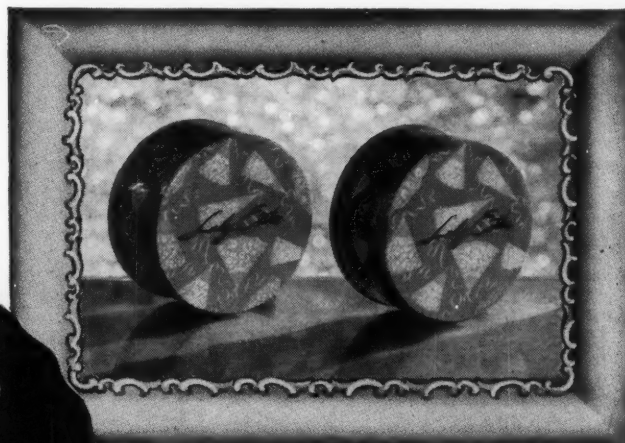
featured in
Columbia's
technicolor
production
"Tonight and
Every Night"

Beauty

DOES IT . . . Every Time

ON THE SCREEN the alluring beauty of Leslie Brooks draws audiences, increases "box office."

OVER THE COUNTER the eye-stopping beauty of an artfully designed package draws buyers, increases sales.



The BEAUTY of this Lady Esther package helps make sales—AT THE POINT OF SALE

THE 5 ESSENTIALS OF A SELLING PACKAGE

- 1 It must be practical, production-planned, economical to manufacture, easy to fill or pack.
- 2 It must fully protect and conveniently dispense the product.
- 3 It must be easy to handle, stack, display.
- 4 It must proclaim the quality and identity of your product.
- 5 It must be notably "good looking," memorable, ATTRACTIVE!

W. C.

Ritchie

and COMPANY

8841 Baltimore Avenue, Chicago 17

SET-UP PAPER BOXES • FIBRE CANS • TRANSPARENT PACKAGES

NEW YORK • DETROIT • LOS ANGELES • ST. LOUIS • MINNEAPOLIS

SEVENTY-NINE years of packaging experience has taught Ritchie that—with all the complex, practical factors involved in the production of a package—it is always possible and extremely profitable to add beauty!

WAY TO A BETTER SELLING PACKAGE

The Ritchie way integrates art and artisanship—to give you a better selling package at a low unit cost. A package that quickly, unmistakably identifies, fully protects and conveniently dispenses your product. A practical, production-planned package—easy to fill or pack, easy to handle, to stack and display—but above all designed for eye-appeal, for quality-impression, for beauty that sells!

Have you ever seen **THE METAL COW?**



THIS IS IT....

THE CAN OF POWDERED MILK
filled with

STOKES & SMITH FILLING MACHINES

Here we show but one of the many installations of S & S equipment for packaging war needed food products. If you are filling Powdered Food Products or Powdered Chemicals S & S Equipment can no doubt answer your filling problems. Write us for complete details.

LAND O' LAKES CREAMERIES INCORPORATED



GENERAL OFFICES
MINNEAPOLIS 13, MINNESOTA
November 27, 1944

Mr. C. E. Schaeffer
Stokes & Smith Co.
Summerdale Ave. near Roosevelt Blvd.
Philadelphia 24, Pa.

Dear Mr. Schaeffer:

We have received photographs we had taken of our filling equipment and are mailing two of them to you under separate cover, showing two different positions of the filling machine. As I told you on the phone, we are very pleased with this equipment and it is performing much better than we had any reason to believe when placing the order.

Yours very truly,

LAND O' LAKES CREAMERIES, Inc.

Wm J Rice

Sales Manager
Milk Powder Department

TGF:es

Right—S & S Universal Filling Machine (with Auger Vac) filling 5 lb. cans of Powdered Whole Milk at Land O'Lakes Creameries, Inc., Minneapolis 13, Minnesota.

STOKES & SMITH CO

Frankford, Philadelphia 24, U. S. A.

FILLING • PACKAGING • WRAPPING MACHINES

Speeds to suit your needs—15-30-60-120 per minute



Testing Laboratory

Every H-A container goes through elaborate tests at our factories and in your packing plants. But the final testing laboratory is really the home.

For it is the housewife who decides on the efficiency of your jar from her standpoint and is most important in engineering your package and sales.

Her recommendations and wishes are incorporated in every H-A design.

HAZEL-ATLAS GLASS COMPANY, Wheeling, W. Va.



when bottles mean life itself . . .

Many bottles can tell a Treasure Story, in that their contents are precious beyond measure. The field of medicine can attest to this, especially in time of war.

Blood banks and plasma containers, bottled Life for thousands of soldiers, are excellent examples. Chemicals of great strength and dissolving potency, impossible to store in metal or other containers, also find perfect housing in glass containers.

The Glass Container & Cap Outlet Company, organized and headed by Mr. John Slowey, urges you to utilize your useless accumulation of odd containers of ANY kind — bottles or otherwise — which clutters up your stock rooms and warehouses. Mr. Slowey, in the capacity of a business man who enables the useless to become vitally useful, will pay a CASH PRICE for your accumulation. Size or Quantity do not matter. The same offer follows for bottle caps, jar caps, ANY caps.

Call us for a quotation today. Receive some useful cash for what to you may be useless trash.

glass
container
&
cap
outlet co.

876 Broadway
New York 3, N. Y.

Speed Victory!
BUY BONDS WITH
THAT EXTRA CASH!



Complete

...as in Betner Service

Yes, sir, it's a *complete* packaging service that Betner gives—from idea to finished bag.

And available to you, all or part.

Is it frozen foods you're interested in? Or containers for retail or institutional use? Leading firms have found their answer in Betner Bags.

For frozen foods, coffee, cereals, flour mixes, powdered and dehydrated foods, etc., nothing has come along more satisfactory to progressive processors than Betner Bags. They want quick fill-and-seal, top moisture-vapor protection, a minimum of packaging equipment. They demand

insurance against leakage, seepage, loss of flavor. They get 'em all with Betner Thermoseal and Lamofilm Bags.

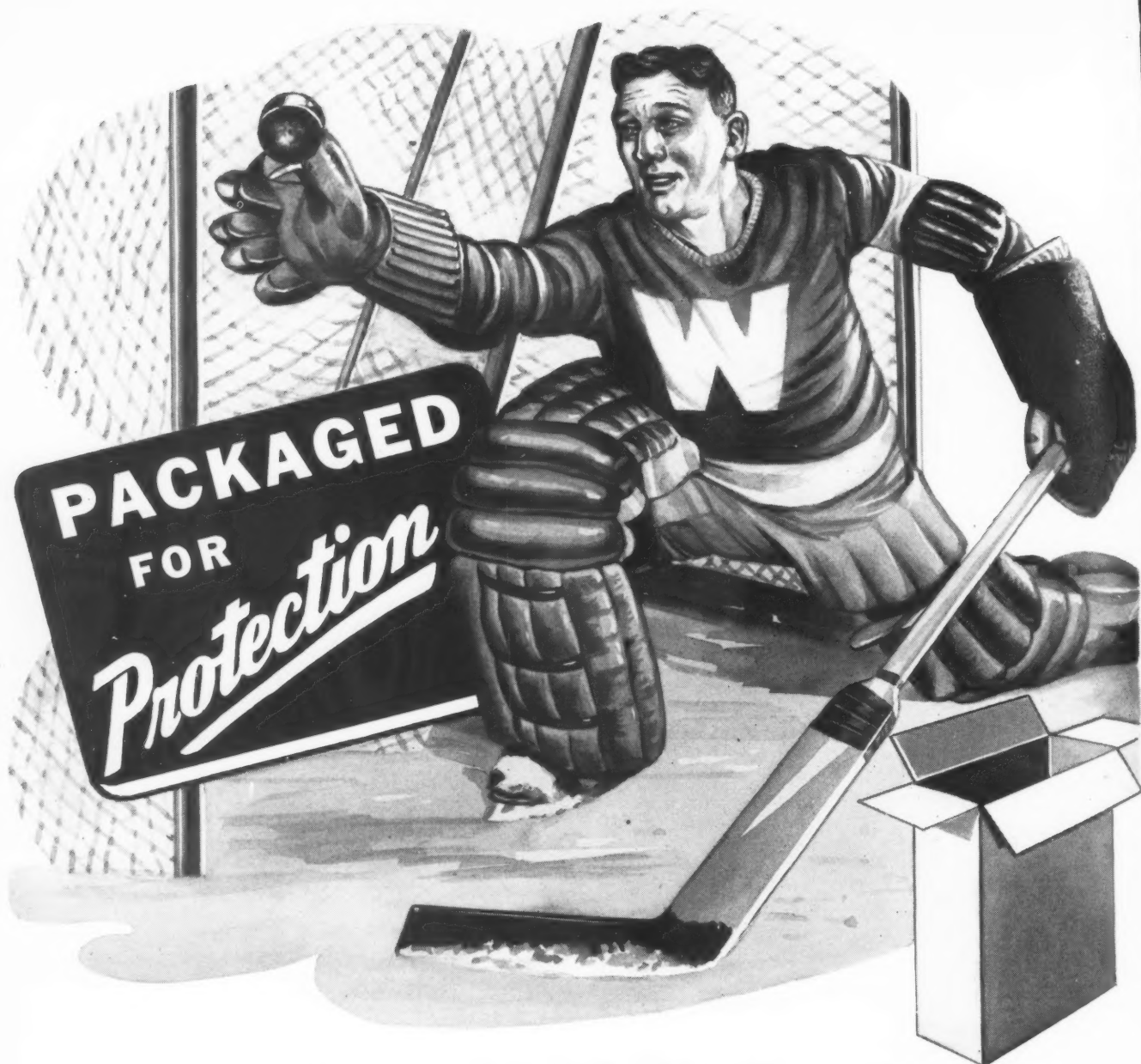
A complete bag service is on call here. Idea men, art staff, printing presses, bag-making machinery at your command—or any part thereof. Write us about your problem, present or postwar.

Benj C Betner Co

DEVON, PA.

Benj C Betner Co of California, Los Angeles, Cal.





Scoring against this goalie will be tough. He's well-prepared and ready to guard his goal against the stiffest competition.

Planned packaging *now* is your protection against postwar competition for new markets . . . new customers. When not only safe delivery but attractive, eye-appealing packaging will mean the difference between business won or lost.

Warner Craftsmen have behind them 55 years of experience in meeting and solving thousands of packaging problems. Their laboratory engineers are alert to the present day advances in design and materials, and they are continually planning for the packaging needs of the future.

Protect your postwar goal by placing your packaging problems with Warner-craft *now*. They are ready today to help you plan the package that will sell your product tomorrow.

Makers of set-up and folding boxes of all types, transparent acetate containers, hand made specialties, counter displays and dispensers.

THE WARNER BROTHERS COMPANY

Main Office and Factory: 325 Lafayette Street, Bridgeport, Conn.
New York Sales Office: 200 Madison Avenue, New York, N. Y.

WARNERCRAFT
"THE FINEST WORD IN PACKAGING"

LET'S CLEAR UP
THIS MATTER
OF

transparent tape



Here's a tape that's clear as glass — and stays clear. It has no "curl back" — no tangle — no waste. It seals instantly — without water — speeds production — cuts down costs. Compare it — foot by foot, yard by yard — with any competitive transparent tape. You'll see why so many industrial and commercial users are switching to

FILMONIZE TRANSPARENT TAPE

Let your local distributor show you the entire FILMONIZE line — Transparent Tapes, Colored and Multi-Colored Tapes, Specially Printed Tapes, Riveting Tapes, Identifying Tapes, Splicing Tapes, Acetate Fibre Tapes. He can point out ingenious ways of saving you time and money — with one or several of these amazing products. Widths of ½" to 18" throughout the line.



Filmonize
TRADE MARK REG.
SELF-SEALING TAPES

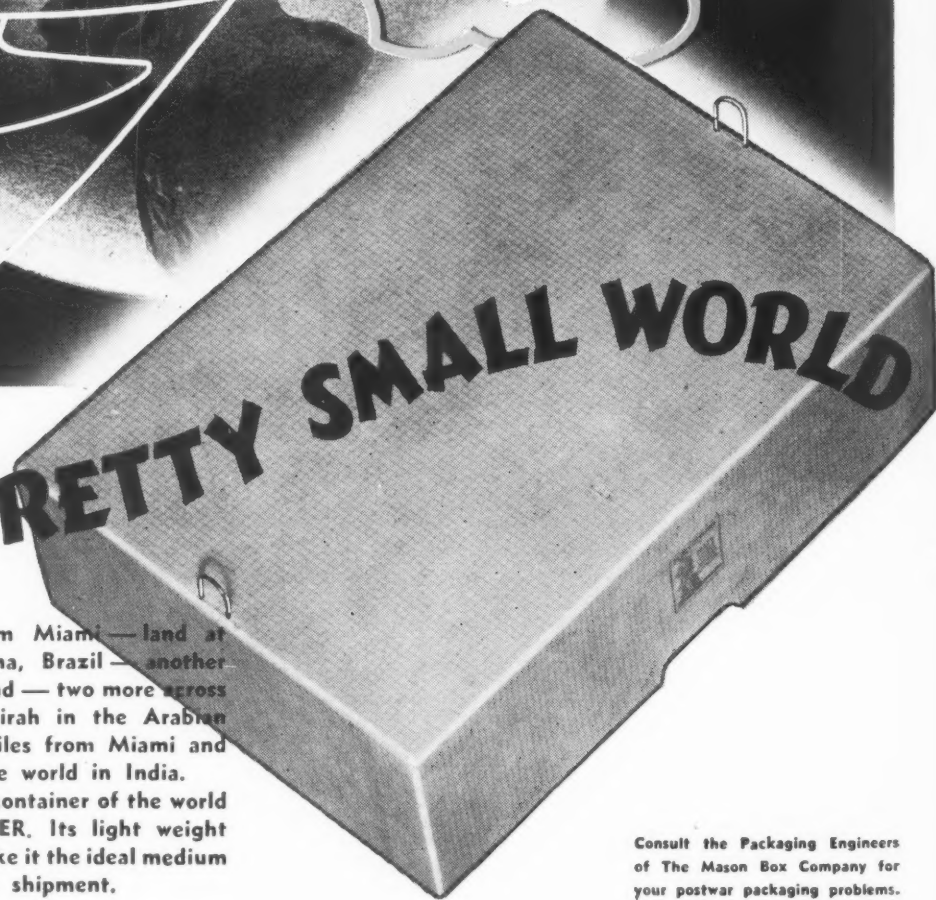
INTERNATIONAL PLASTIC CORPORATION
Morristown New Jersey



IT'S A PRETTY SMALL WORLD

TAKE OFF from Miami — land at Puerto Rico, British Guiana, Brazil — another short hop to Ascension Island — two more across Africa — set-down at Masirah in the Arabian Sea — and then 12,000 miles from Miami and you're half way around the world in India.

The favorite shipping container of the world is the Mason MAILMASTER. Its light weight and rugged construction make it the ideal medium for overseas and domestic shipment.



Consult the Packaging Engineers of The Mason Box Company for your postwar packaging problems.

The MASON BOX COMPANY

ATTLEBORO FALLS, MASS. — 175 5TH. AVE., NEW YORK

★ Proving ground for your product

The final result of all your research, your raw material control, your skill in manufacturing is placed in a package and sealed—and your reputation sealed with it. From then on it's all out of your hands—it's up to the package.

You won't be in store and home to display your product as you'd like, but the package can. *You* won't be there to make your package easy to open and close, and use and use again—but the closure can.

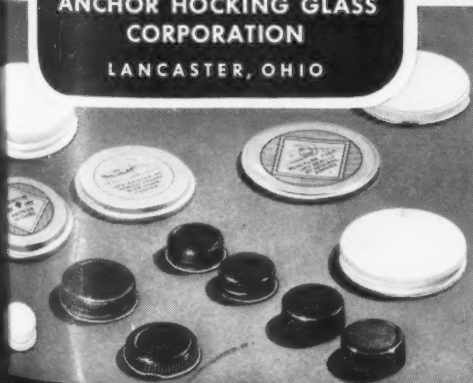
That's why so many manufacturers, with products they're proud of, use Anchorglass and Anchor caps—to *keep* their product as perfect as they made it, all the way into the home and to the satisfactory use that means re-orders.

Write us today. We will be glad to work with you to increase your sales and profits with *packages that protect* the maker's reputation.

"Meet Corliss Archer" every Thursday evening, entire Coast-to-Coast Network CBS.



PRODUCTS OF
ANCHOR HOCKING GLASS
CORPORATION
LANCASTER, OHIO



LOOKING INTO THE FUTURE



When you think of bottles
think of
Swindell
machine made and hand made
glass containers for cosmetics,
drugs and beverages.

SWINDELL BROTHERS, Inc. BALTIMORE, MARYLAND

200 FIFTH AVENUE, NEW YORK

ROBERTO ORTIZ—HAVANA, CUBA



**CRACKERS
YOU CAN EAT
IN BED—**

but won't like!

Cause for divorce is the eating of **crispy, crunchy, skin-scratching crackers or cookies in bed.** And cause for divorce from a baker's goods are crackers or cookies that arrive at a bedside as soggy and limp as a wet newspaper.

But, today, there's an easy out for food packers who want to get their products to point-of-use in *repeat sale* condition.

To preserve the quality of all manner of packaged foods, pre-packaged, processed or frozen meats, Keller-Dorian offers a new, war-tested *functional* packaging paper. This new Keller-Dorian *functional* packaging paper is

available in two types: plastic coated and aluminum foil coated. They are either moisture-vapor proof (M. V. T. of 1.3 grams) and grease proof, or, moisture-vapor, grease, and light-proof.

Coatings are permanent, will not crack or peel . . . will not become brittle or tacky within a temperature range of 190° above to 50° below zero (F).

Keller-Dorian *functional* papers may be heat-sealed, cut, scored and folded to form any shape, size and style of package or container. They are non-toxic; seal-in flavor, seal-out foreign odors and tastes.

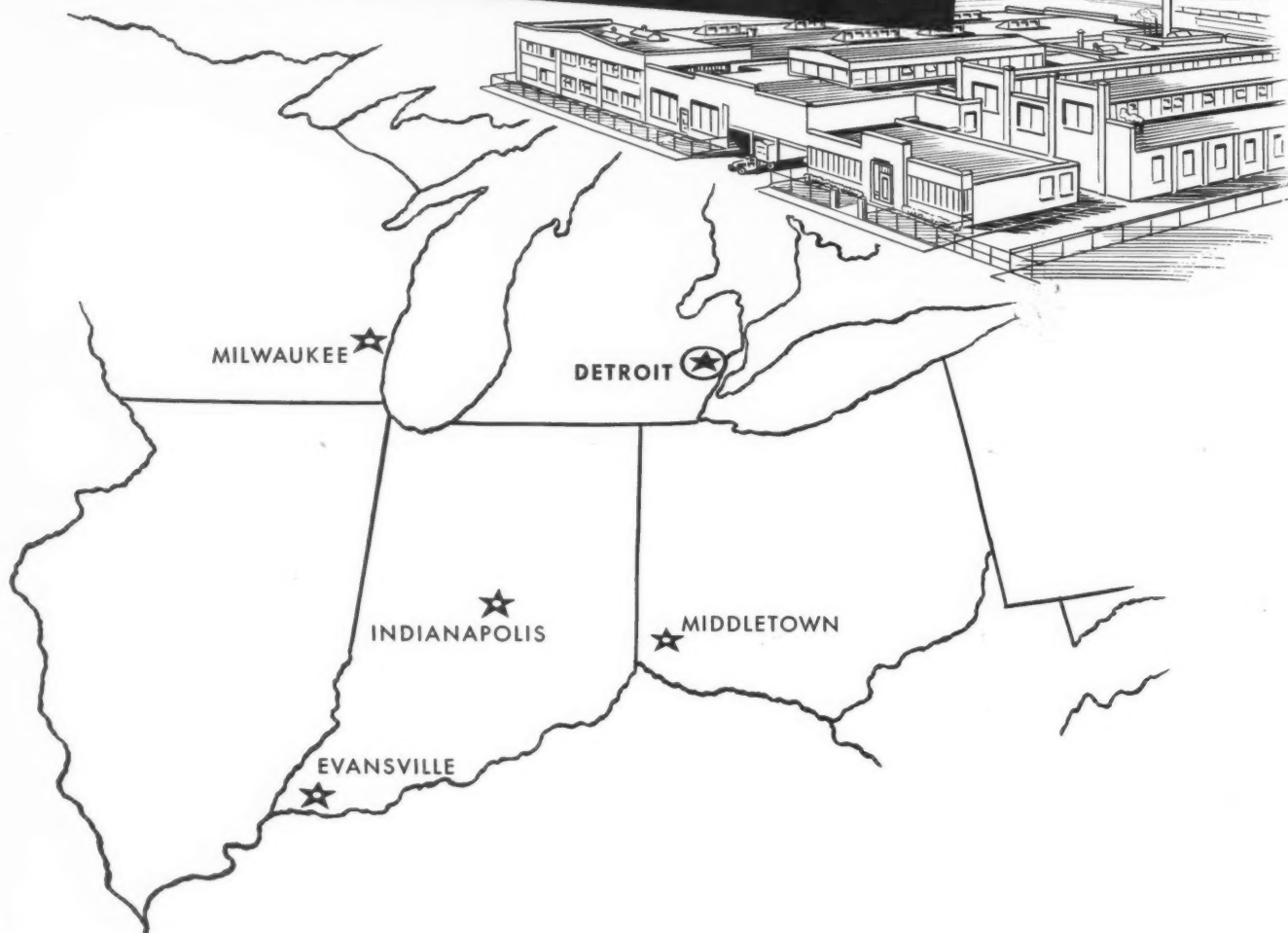
No matter what your field of packaging, chances are, Keller-Dorian's unique *functional* packaging papers and experience, techniques and thinking will be of value to you. Write today for free testing samples and data sheets.

**KELLER-DORIAN
CORPORATION**

**Empire State Building
New York 1, N. Y.**

FUNCTIONAL PACKAGING PAPERS *for Protecting Perishable Products*

AND NOW DETROIT...



TO IMPROVE OUR COVERAGE of America's richest industrial area and to even better serve you and our Michigan customers, we have acquired the business of the Detroit Paper Products Corporation, which has been serving that area for over 27 years.

The centralized facilities of our planning, engineering and research departments are now available to the Detroit area.

Looking forward to brighter days, this is another step in Inland's program to help build for the prosperity that is sure to come following Victory.

INLAND CONTAINER CORPORATION

INLAND

CORRUGATED FIBRE BOXES



INDIANAPOLIS, IND. • MIDDLETOWN, OHIO • EVANSVILLE, IND. • MILWAUKEE, WIS. • DETROIT, MICH.



BONDERIZED Steel Cans

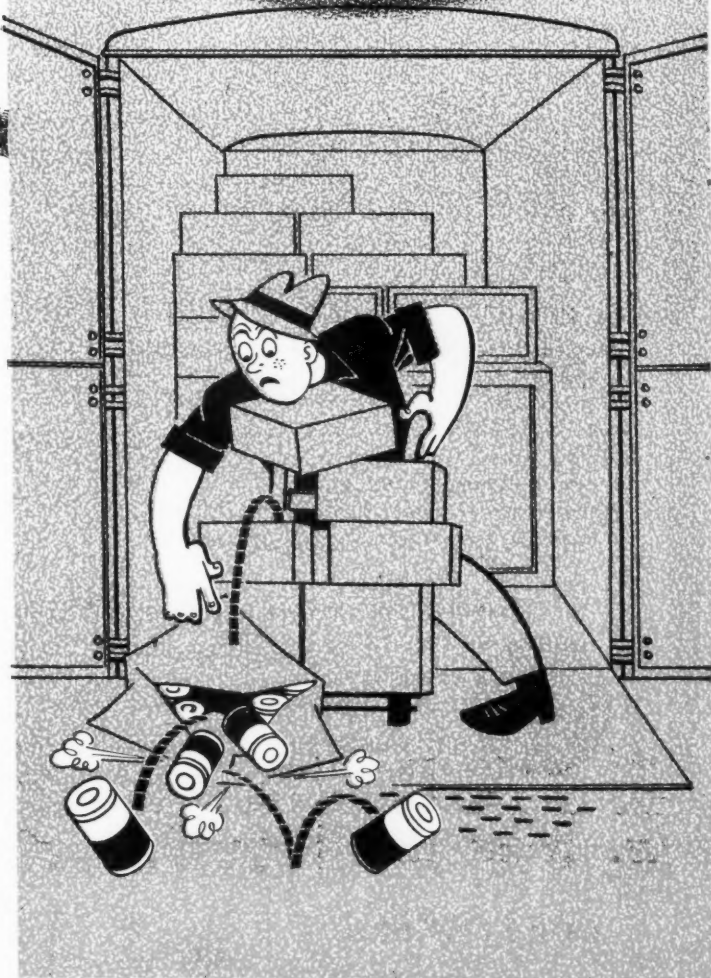
STAND THE "SHIPPING TEST"

From packing plant to pantry is a long, severe trip for the food or drug container and that's why for over a hundred years steel has been the ideal container material. It stands up under rough shipping and handling, storage and shelf display.

Today, steel plus **BONDERIZING** provides a food or drug container which, in addition to resisting rough handling, retains its fine, *selling* appearance indefinitely.

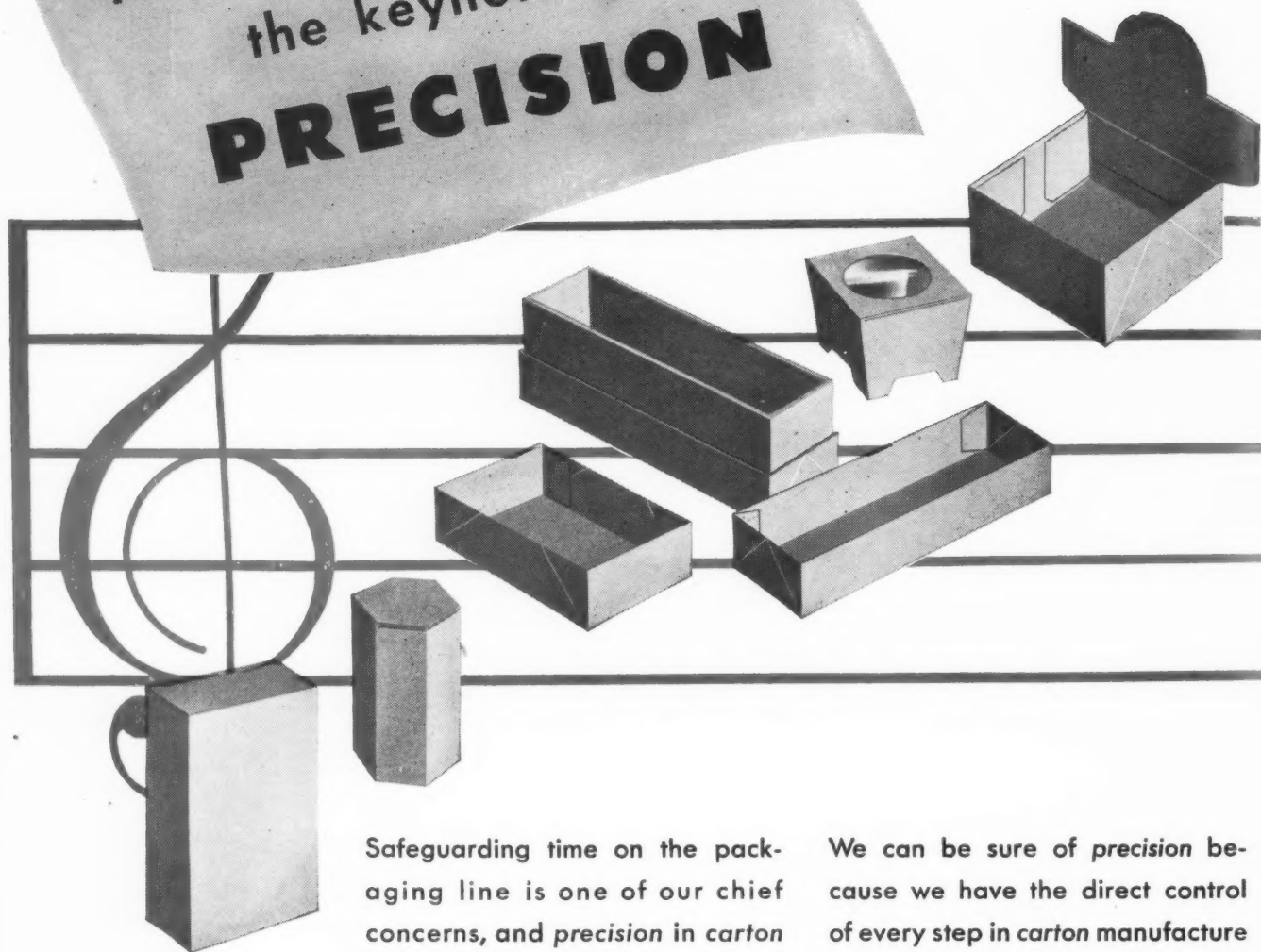
Bonderizing changes the steel surface to a rust resistant phosphate coating. Where the container is self-lithographed, Bonderizing anchors the paint *into* the steel surface. Steel plus Bonderizing assures maximum protection for the contents, keeps the can exterior fresh and appealing to the consumer.

PARKER RUST PROOF COMPANY
2187 E. Milwaukee Ave. Detroit 11, Michigan



PARKER PRODUCTS CONQUER RUST

Anywhere on the scale
the keynote is
PRECISION



Safeguarding time on the packaging line is one of our chief concerns, and *precision* in carton manufacturing is the keynote.

Each carton is a piece of *precision* equipment.

It falls into step with your packaging machinery as smoothly as the cams, gears, and levers which are a part of the machine itself.

We can be sure of *precision* because we have the direct control of every step in *carton* manufacture through board production, laboratory testing, and trained personnel for *precision* conversion.

Our clientele lists some of the largest carton users in the world.

Let us show you how to save time and money by **planned packaging.**



THE OHIO BOXBOARD Co.

RITTMAN, OHIO

SALES OFFICES: RITTMAN • AKRON • CLEVELAND • CINCINNATI • PITTSBURGH • NEW YORK • CHICAGO

Capacity 500 tons daily

When candy needs a life-guard
at the seashore



CEL-O-SEAL bands supply protection

SALT air is invigorating—but not for these filled candies. When they're sold at such places as the Atlantic City boardwalk, it's important that the closure offers protection from humidity. At the seashore, or wherever you find these Thinshell candies, they are perfectly preserved, unaffected by atmospheric conditions, the manufacturer reports. A **CEL-O-SEAL*** Cellulose Band seals the glass cap, which is fitted with a waxed gasket. "This absolutely prevents any moisture from getting into the jars," comments the candy manufacturer.

CEL-O-SEAL Bands, a modern product protection, fit snugly around the closure, sealing in freshness and flavor, guarding against sampling and substitution. They add a smart, colorful touch . . . and when impregnated with monogram or sales message, they serve as an attractive second label. Write today for full information on how **CEL-O-SEAL** bands can give added protection and sales appeal to your products.

CEL-O-SEAL bands and
WIND-O-BAND* seals are sold by:

E. I. du Pont de Nemours & Co. (Inc.)
"Cel-O-Seal" Section, Empire State Bldg., N. Y. C. 1

Armstrong Cork Company,
Glass & Closure Div., Lancaster, Pa.

I. F. Schnier Company,
683 Bryant St., San Francisco 7, Calif.



*TRADE MARK

BETTER THINGS FOR BETTER LIVING
...THROUGH CHEMISTRY



PLASMA TO THE RESCUE... **Mr. Cellophane protecting the needle!**

THE NEEDLES which transmit blood plasma to our Armed Forces *must be kept sterile*. And that's Sylvania cellophane's job! The needles are first sealed in cellophane then sterilized at terrific heat. The cellophane stays air-tight and bacteria resistant. The needles stay sterile!

One more essential war job for Sylvania! One more "command performance" for cellophane. But bear in mind that the developments Sylvania is making today will mean more uses for cellophane . . . and better cellophane . . . in the postwar tomorrow.

SYLVANIA CELLOPHANE

Made only by SYLVANIA INDUSTRIAL Corporation

Manufacturers of cellophane and other cellulose products since 1929

General Sales Office: 122 E. 42nd St., New York 17, N. Y. ★ Plant and Principal Office: Fredericksburg, Va.



• Reg. Trade Mark

BAGS

INNERLINERS

OVERWRAPS

CARTONS

GLASSINES

LAMINATIONS

EQUIPMENT

COMBINATIONS

ALL at his command

PAPERS

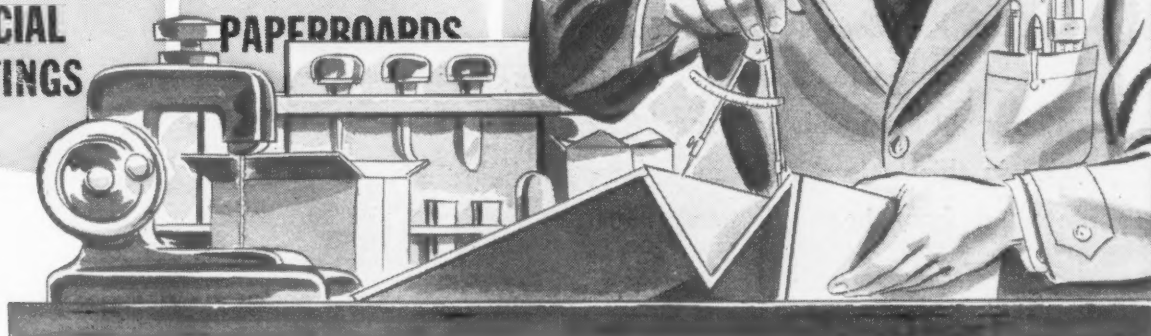
CELLOPHANES

FILMS

TIONS

SPECIAL
COATINGS

PAPERBOARDS



... TO BUILD YOUR PACKAGE

At Marathon, the technical staff designing your package has a complete range of materials at its command. The right material, or materials, to meet requirements are selected. The package construction and design best suited to do the job are chosen. This broad diversification of Marathon production and converting facilities is responsible for the outstanding packaging results being accomplished by Marathon in the food industry. Your package inquiry . . . whether for immediate application or post-war planning . . . is welcomed by Marathon and will receive prompt attention.

MARATHON

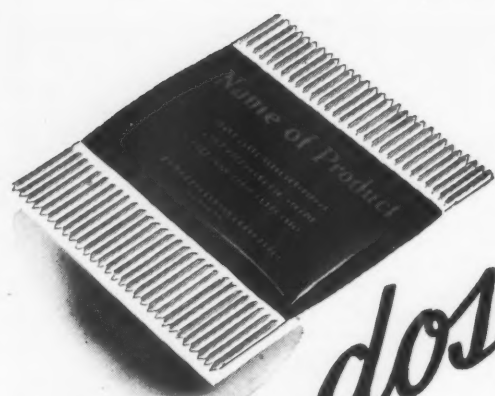
The trade name "Menasha" has been changed to "Marathon." There is no change, however, in sales policies or personnel which will continue to pace the field in package development.



MARATHON CORPORATION

MENASHA, WISCONSIN

Formerly The Menasha Products Co.



YES, one dose at a time! That's the way these Trans-Pac dosage packages are packed—specially planned to suggest the right dosage to customers at even a single glance! The products sealed in this little cellophane package are fully protected from heat, dirt and moisture until opened for use.

This type of creative packaging for the drug, food and allied industries is just one of the many fine packages Trans-Pac will be turning out when facilities are again available. Whether it's cellophane, pliofilm or metal foil—one dose or twelve—we can plan your package needs now. In addition to our own staff, we also have at our disposal the engineering and research divisions of the leading manufacturers of packaging materials.

Our long experience working with diversified products enables us to turn out the best in present-day packaging. We should be happy to advise you on your particular post-war packaging needs.

TRANS-PAC SERVICES, INC. PACKAGES PRODUCTS

for the following organizations:

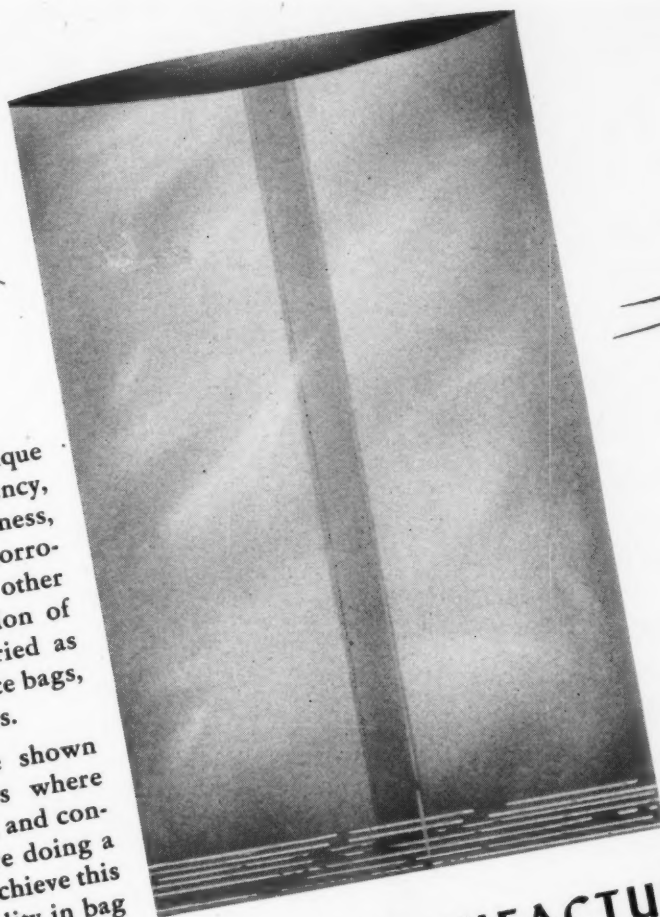
EASTMAN KODAK CO.
CAMPBELL'S SOUP CO.
J. C. ENO, INC.
BLOCK DRUG CO., INC.
CHEF BOY-AR-DEE INC.
FOSTER MILBURN CO.
THE NORWICH PHARMACAL CO.
LEADER NOVELTY CANDY CO., INC.
GENERAL MILLS, INC.
C. J. VAN HOUTEN & ZOON, INC.
THE ANACIN CO. "WHITEHALL"
CARTER PRODUCTS, INC.
BREAKSTONE BROS., INC.
MARLON CONFECTIONS CO.
JOHNSON & JOHNSON INTERNATIONAL
WALLACE & TIERNAN CO., INC.

TRANS-PAC SERVICES, INC.

602 WEST 52ND STREET, NEW YORK 19, N. Y.

MEHL CELLOPHANE BAGS

will meet your need Today...Tomorrow!



★ Cellophane with its unique combination of transparency, grease-proofness, water-proofness, moisture-proofness and non-corrosiveness adapts itself as no other material to a wide application of war packaging uses as varied as ration components, ordnance bags, air tow targets, or bandages.

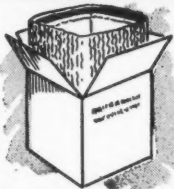
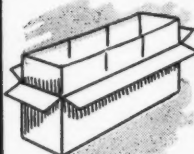
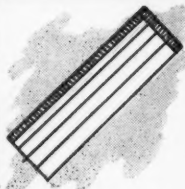
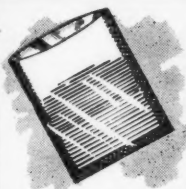
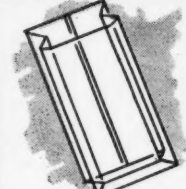
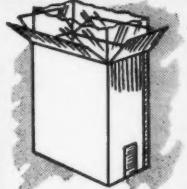
Recent observations have shown that cellophane packages where the proper films are used, and contents correctly packed are doing a very creditable job. To achieve this—high standards of quality in bag manufacture are necessary. MEHL Cellophane Bags, along with Waterproof Case Liners, Foil Pouches and Grade C Bags embody this high standard of quality.

MEHL MANUFACTURING CO.
 Division of Sydney-Thomas Corporation
 CINCINNATI 5, OHIO

2351 FERGUSON ROAD

New York Office: 277 Broadway, New York 7, N. Y.

Pacific Coast Distributor: Western Package Products Co., 1807 E. Olympic Blvd., Los Angeles 21, Cal.

Pressure Seal Liners	V-Type Liners	Grade C Pouches	Foil Pouches	Paper Grade A Bags	Specialty Bags
					

FROM YOUR PRODUCTION LINE



**SHE'S NOT
NEEDED
HERE,
ANYMORE**

A "LIFT TO PRODUCTION"—A Duraglas Container user had no space for a normal length of conveyor between two machines in his line. He had to have a method of accumulating jars between the machines. A rotating disk reservoir and a positive worm feed did the trick. Simple, isn't it? But it saves space, saved the cost of one operator, made handling easier. Just a typical instance of Owens-Illinois know-how giving a lift to production for a Duraglas Container customer.

TO YOUR CUSTOMER'S MIND

A "LIFT TO DISTRIBUTION"

Right on the beam is Irving Kane, Manager of Hillman's Food Market, a stone's throw from Marshall Fields in the heart of Chicago's famous Loop. With the sugar shortage bothering customers Mr. Kane helps them solve their problems by this mass display of sweet syrups and related products. Mr. Kane says, "It not only seems natural but fundamental to feature items that complement each other, making two sales instead of one from the same floor space."



A "LIFT TO SELLING"—Week by week, month by month, in the pages of leading magazines and over the air, millions of American housewives are learning to prefer to see what they are buying before they buy it. The advertisements that you see here, but in four colors and full page size are only two of the continuing stream of Duraglas Container advertisements featuring products packed in glass. Look for them in the leading magazines every month. When you use Duraglas Containers you enjoy service from your production line to your customers' minds.

Enjoy a "Lift to Living" that is a "Lift to Selling" products packed in Duraglas Containers—Fred Waring and his Pennsylvanians, over the Blue Network from coast-to-coast every Thursday Evening—10 p.m. E.W.T.—9 p.m. C.W.T.—8 p.m. M.W.T.—7 p.m. P.W.T.

OWENS-ILLINOIS GLASS COMPANY
TOLEDO 1, OHIO
Branches in all principal cities

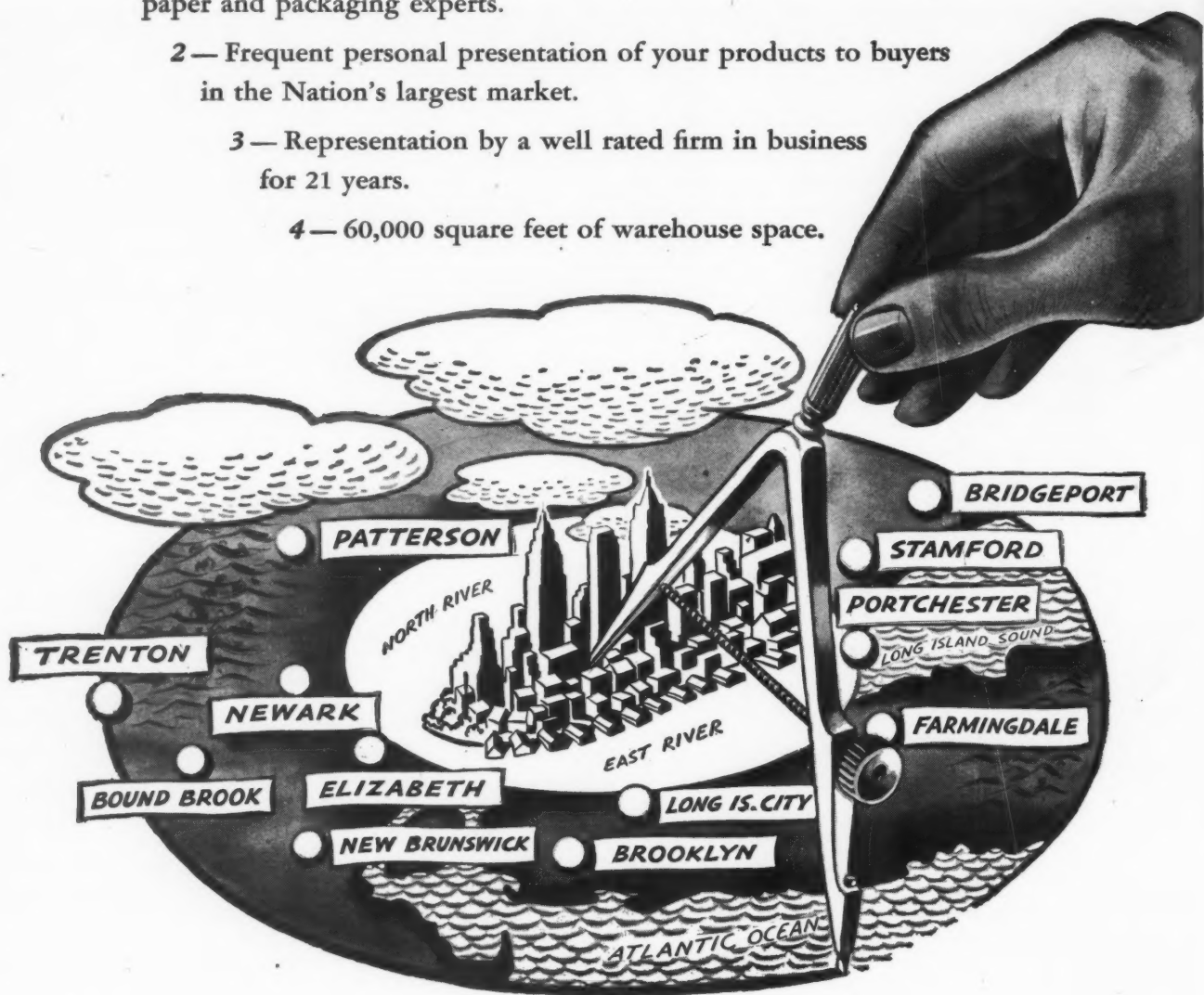
Duraglas CONTAINERS
TRADE MARK REG. U. S. PAT. OFF.
Preserve, Protect and Sell by Sight



Let *Criterion* distribute your products in the nation's largest market

We can offer a manufacturer of quality paper products and paper specialties for both War and Post-War use the following:

- 1 — Strong sales representation by an efficient, highly trained staff of paper and packaging experts.
- 2 — Frequent personal presentation of your products to buyers in the Nation's largest market.
- 3 — Representation by a well rated firm in business for 21 years.
- 4 — 60,000 square feet of warehouse space.



If you are interested in saving time and money in recruiting and training salesmen, if you are interested in centrally located warehouse facilities in the New York metropolitan area, if you are interested in lowering your distribution costs, WRITE us today for further information.



CRITERION PAPER & TWINE COMPANY

345 WEST 36th STREET • NEW YORK 18, N. Y.



COULD YOUR SECRETARY DO THIS
with your shipping drums? This Alcoa
Aluminum reusable drum weighs only
21 pounds. What do yours weigh...
and cost you to ship?

*Weight saving idea
for drum users..*

... thanks to the Army Air Force

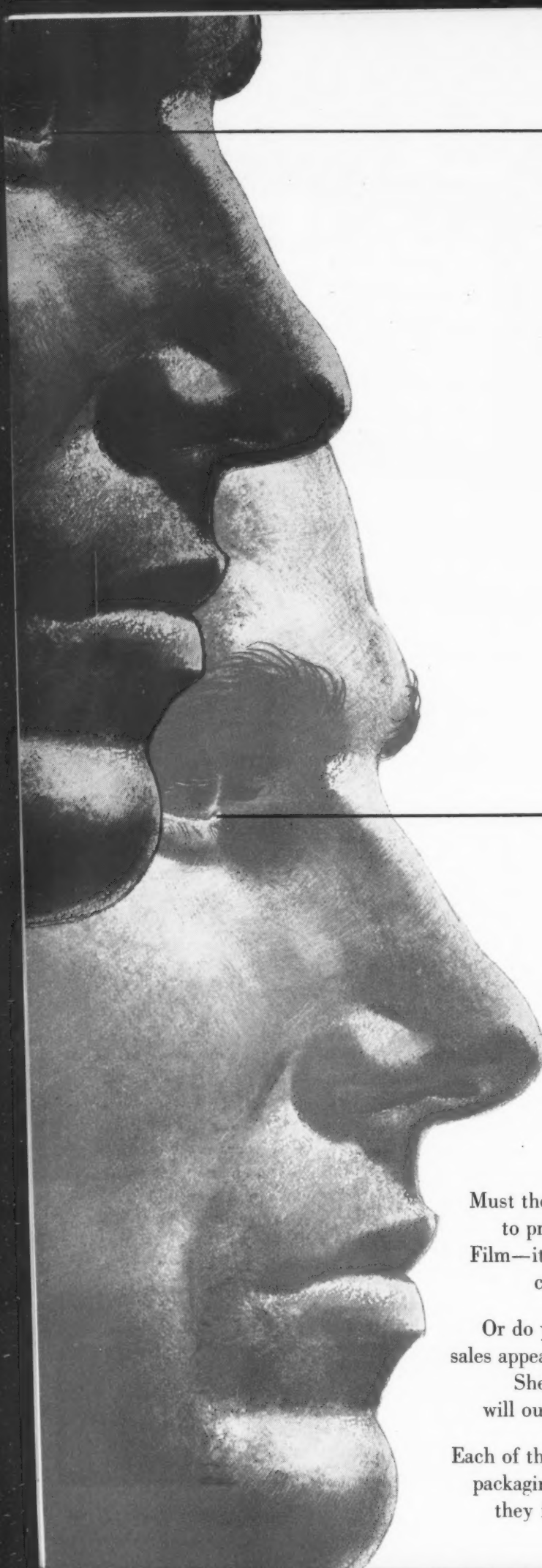
100-octane gasoline is being flown over the "hump" to China in aluminum drums . . . built by Alcoa. 31 pounds lighter than ordinary returnable drums, they permit carrying hundreds of thousands of additional gallons of gasoline per month to the 14th and 20th Air Forces.

Developed by the USAAF and Alcoa engineers specially for the China-Burma-India theater, these lightweight drums have interesting postwar possibilities for shippers who use similar containers. Their ability to withstand rough handling has been proved by thorough tests at Wright Field and by actual use. Furthermore, they require no painting; will not rust.

But lower shipping costs and easier handling are the advantages that interest shippers most in these drums. Those same advantages can be had in barrels, carboys, and other bulk containers when built of Alcoa Aluminum. Worth looking into, don't you think? Write ALUMINUM COMPANY OF AMERICA, 2129 Gulf Building, Pittsburgh 19, Pennsylvania.

ALCOA ALUMINUM





which

does

your

package

need?

Must the new package you are planning be moisture resistant to protect its contents properly? Then consider Saran Film—it gives three times more protection than the next comparable packaging material.

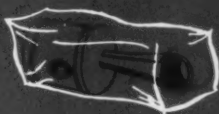
Or do you require a rigid transparent package that affords sales appeal as well as protection? Then look to Ethocel

Sheeting—the tough and durable packaging material that will outlast most similar products.

Each of these excellent Dow materials is designed to do a specific packaging job—and do it well. If you would like to know how they fit into your future plans, write for more information.

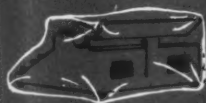
Saran film

KEEPS MOISTURE IN OR OUT



PRESENT AND POTENTIAL USES

Method II packaging, dehydrated packages for metal parts and assemblies, packing corrosive and anhydrous chemicals, bottle closure liners, flexible containers requiring good moisture vapor and gas impedance, etc. Shows much promise as important visual sales aid.



PROPERTIES AND ADVANTAGES

Highest degree protection against moisture vapor transmission; three times greater than comparable materials. Soft, pliable, yet tough and strong. Corrosion-resistant. Clear, transparent film. Modified heat sealing equipment recommended. Thickness range .001 to .003 inch.

Ethocel Sheeting

RIGID, TRANSPARENT PACKAGING



PRESENT AND POTENTIAL USES

Boxes and containers of all types, sizes, and shapes for jewelry, cosmetics, and other products requiring visual display.

Also used for displays, advertising novelties, and specialties, envelopes, greeting cards, labels, lamp shades, loose-leaf devices, decals, records, electrical insulating tape, ice cube trays, lighting fixture covers, and similar products.

PROPERTIES AND ADVANTAGES

Rigid sheeting providing unique combination of toughness and flexibility. Retains these characteristics and transparency over long periods. Withstands wide temperature variations and severe conditions. Is easily fabricated by drawing, folding. Can be beaded, printed and joined by adhesives.

Burns slowly. Minimum thickness .003 inch. Transmits moisture slowly.

THE DOW CHEMICAL COMPANY
Midland, Michigan

New York • Boston • Philadelphia • Washington • Cleveland • Detroit
Chicago • St. Louis • Houston • San Francisco • Los Angeles • Seattle

DOW
PLASTICS

FOR BETTER PACKAGING:

SARAN FILM • ETHOCEL SHEETING • STRIPCOAT • STYRON

All Patents Waived On Machine For Speeding & Packaging Victory



*Details Gladly Supplied
By The War Finance Division*



**WRIGHT'S Automatic
Machinery Company**

300 Calvin Street, Durham, North Carolina

"Specialists Since 1893 In Putting Labor Saving Ideas Into Action"



These wartime developments reflect tomorrow's packaging trends

TAKE a good look at these Durez phenolic plastic containers. Notice the intricate make-up of each . . . the molded-in inserts . . . the durable construction. They are but two of many amazing wartime packaging developments that reflect tomorrow's trends. Illustrated at right is an aircraft sextant case modeled from a Durez phenolic compound. Not only does this remarkable container possess high impact strength but also it is extremely lightweight, and resistant to moisture and temperature extremes.

The box at left is a wartime developed container for a radio battery. It is extremely rugged, water resistant—and possesses high dielectric strength.

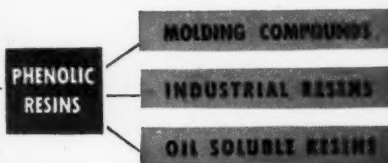
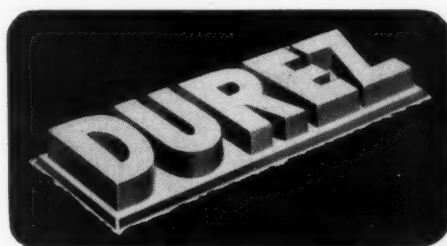
The versatility of the more than 300 Durez phenolic molding compounds combined with the many new mold-

ing methods and processes developed by America's custom molders has resulted in many unusual developments in the container field—and offers an almost unlimited source of possibilities for the postwar container manufacturer.

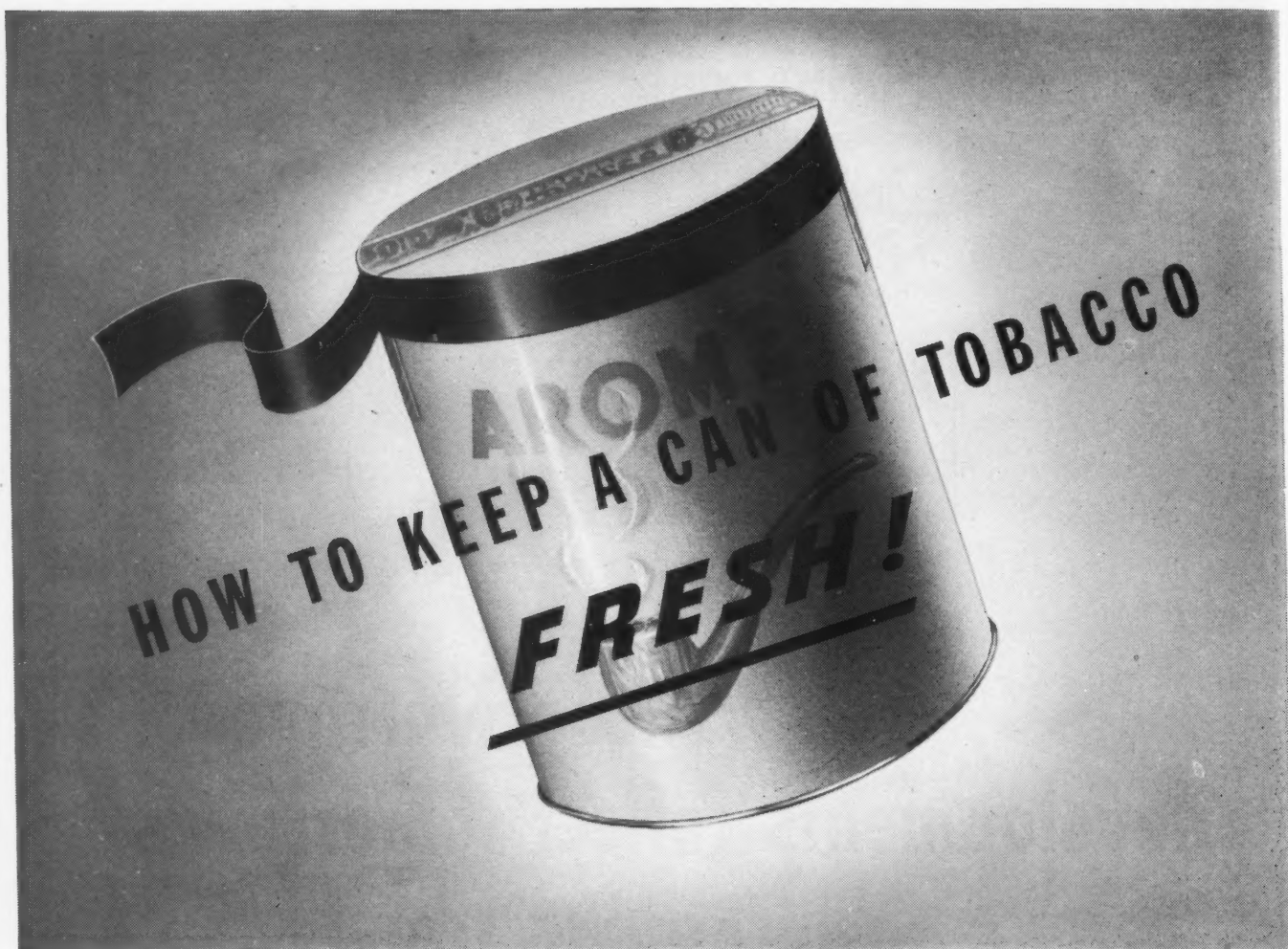
Any assistance which Durez technicians can offer to you or your custom molder towards the successful development of your postwar packages will be given wholeheartedly. Durez Plastics & Chemicals, Inc., 482 Walck Road, North Tonawanda, N. Y.

A TIP ON CAPS

Because of non-bleeding, good moldability, excellent appearance, and durability—all properties of Durez phenolics, they are used extensively throughout the closure field. Bottle and tube caps in all sizes and shapes are daily proving their value in helping to move merchandise faster.



PLASTICS THAT FIT THE JOB



Simply like this! Seal the lid on with a strip of MYSTIK Self-Stik CLOTH TAPE. This superbond, fungicide-treated, water-proof tape keeps dirt, moisture, air *out* . . . seals flavor and freshness *in!* The customer strips the tape off easily, and then *replaces it* again and again . . . keeping the contents in prime condition.

Or what have YOU?

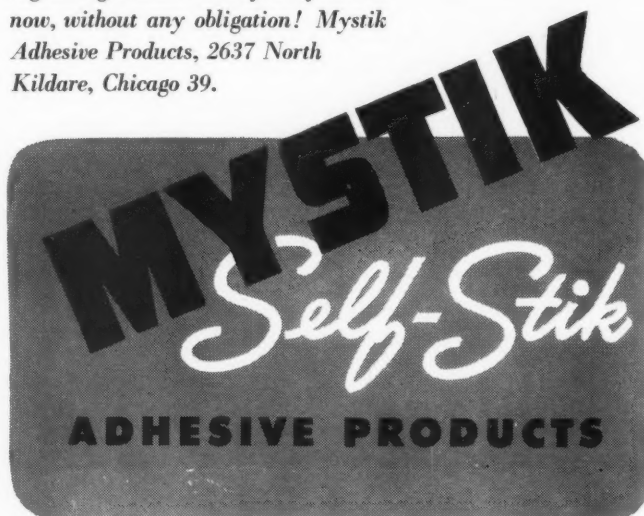
Or what is your problem? If you're re-packaging a product for post-war or creating packages for new products, you should know about MYSTIK Tape. It's not ordinary tape. MYSTIK'S self-stik adhesive holds with a bull dog grip . . . yet strips off easily, cleanly.

MYSTIK is doing countless tough packaging jobs for war — sealing everything from shell cases

and blood plasma to tanks and bombers, to deliver vital materiel and supplies onto invasion beaches in perfect usable condition.

FREE

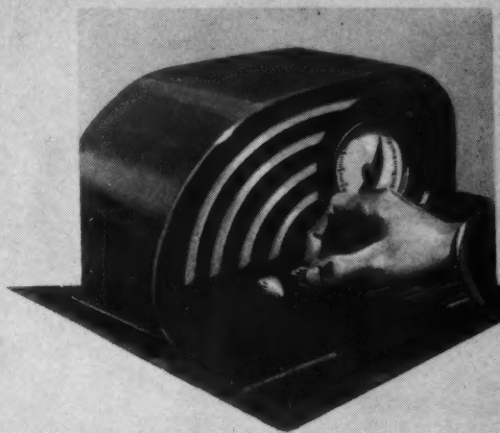
But why not try MYSTIK yourself? A roll in hand will give you ideas on that packaging problem you're working on right now! Write for a free roll now, without any obligation! Mystik Adhesive Products, 2637 North Kildare, Chicago 39.



Self-Stik Cloth and Paper Tapes, Protective and Masking Materials, Water-proof Packaging Papers, Advertising Signs and Displays, Self-Stik Stencils



Cans to protect the family's food . . . Crowns to keep drinks right



The plastic case for your radio And containers, liquid-tight

... ARE ALL MADE BY

CONTINENTAL CAN COMPANY



Products and Divisions of Continental Can Co.
100 E. 42nd St., New York 17, N. Y.

CONTINENTAL PRODUCTS: Metal Containers
Fibre Drums • Paper Containers • Paper Cups
Plastic Products • Crown Caps and Cork Products • Machinery and Equipment.

OPERATING DIVISIONS: The Container Co.,
Van Wert, Ohio • Keystone Drum Company,
Pittsburgh, Pa. • Boothby Fibre Can Division,
Roxbury, Mass. • Mono Containers, Newark,
N. J. — Plastics Division, Cambridge, Ohio.
Bond Crown & Cork Co., Wilmington, Del.
Cameron Can Machinery Co., Chicago, Ill.

FOREIGN SUBSIDIARIES: Continental Can Company
of Canada, Limited, Sun Life Building,
Montreal • Sociedad Industrial de Cuba, S. A.,
Havana.

Continental — for packaging and plastic products

"REPORT TO THE NATION" every Saturday over CBS coast-to-coast network.

HERE'S THE SECOND ad in the new Continental advertising campaign telling folks about all the different things we now make. These ads not only point up the advantages of all kinds of products in cans—they also point out our expanded facilities and complete services. Watch for these full-color ads in such leading national magazines as *Time*, *Newsweek*, *U. S. News*, *Business Week* and *Fortune*. And keep your eye on Continental and the Continental trademark, too. The Triple-C stands for one company with one policy—to give you only the very best in quality and service.

Synthetic Coatings

FOR

PAPER & CLOTH

FUNCTIONAL & DECORATIVE
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You can be sure that the Alcoa Tube recommended for your product is safe in every way. If there is any question of reaction between tube and product, Alcoa's Packaging Laboratory is ready to make thorough tests to determine whether plain or inside-coated tubes should be used.

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STRENGTH . . . Alcoa Aluminum Tubes have sturdy shoulders and sound walls, good to the last squeeze.

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LOW COST . . . You will find the prices of Alcoa Aluminum Tubes to be interestingly low.



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And right around the corner, in the future, women will find that packaging has taken a long step forward.

We don't mean to suggest that the grocery, drug, or department store of the future is going to deliver all your purchases in elaborate packages.

But we do mean that a great advance in utility packaging—decorative as well as protective—is on its way.

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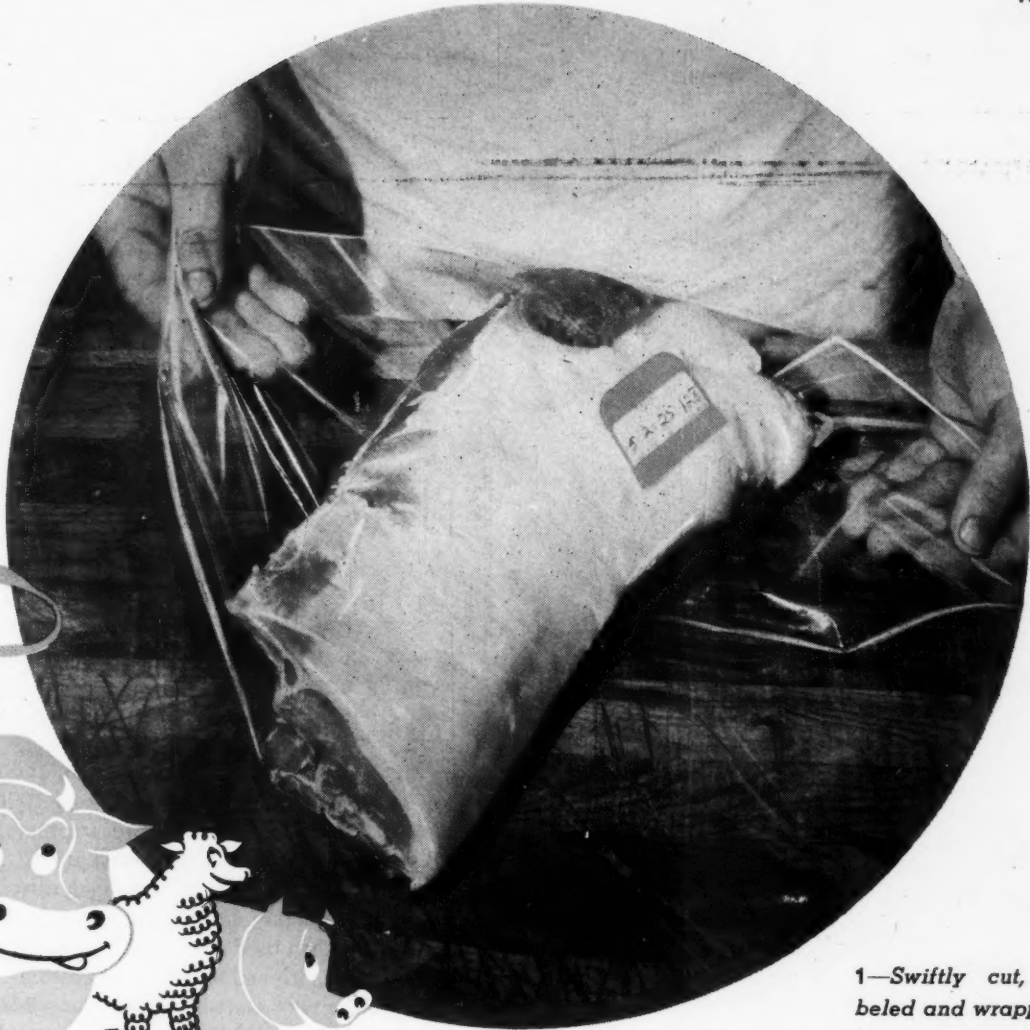
NASHUA NEW HARTFORD, CONNECTICUT

MODERN PACKAGING

VOLUME 18

FEBRUARY 1945

NUMBER 6



1—Swiftly cut, swiftly labeled and wrapped in clean, transparent cellophane.



PACKAGED MEATS . . . Their Background and Their Future

Pre-packaging of fresh-cut meats for retail self-service represents a potential market for over 50,000,000 lbs. of packaging materials annually.

This is a market that would be largely realized today if the war had not intervened. The advantages of self-service meats had become well established by 1941. War conditions not only put a halt to further installations; they made it extremely difficult to carry on where installations had already been made. Despite all the difficulties, the practice has been carried on and even expanded wherever possible.

Food store operators want meat pre-packaging as fast as they can get it, for it has clearly demonstrated higher sales, lower overhead and more profit. Their customers want it for the same fundamental reasons that built the Piggly-Wiggly

idea into a multi-billion-dollar industry: unhampered self-selection and fast service.

With these facts established, it is well for all concerned to take stock of the situation—to see how it developed, where it is going and what may be needed in the way of improved methods, equipment and materials.

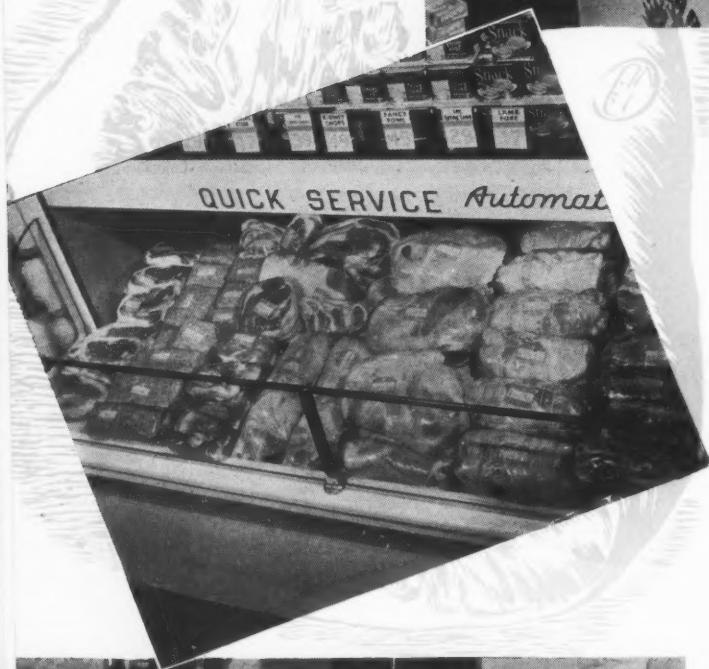
Prior to the chain-store era, meats were usually sold in specialized markets handling only meats, poultry and fish. High operating costs were accepted as a normal expectancy. Combination meat and grocery stores were in the minority.

Chain stores developed in the dry grocery field and later added meat departments. It was cash-and-carry business and subject to peak loads, particularly on week-ends. As super markets grew in size it became more and more difficult to pro-

2—No waiting, but ample opportunity to examine and select. Most consumers prefer self-service meats. 3—Good packaging and closely regulated case display is secret of self-service meat success. 4—Cuts are prepared by regular cutters, in popular sizes, and must be well trimmed.



PHOTO COURTESY SUPER MARKET MERCHANDISING 2



3 Meat departments became bottlenecks, seriously interfering with the smooth flow of store traffic which is essential to super-market success. It was inevitable that super markets—and even the smaller food stores, now forced to operate on a competitive small-profit-margin basis—should attempt pre-packaging of meats.

Many difficulties were experienced, and many of the early experiments were abandoned, around 1930, as unprofitable. Excessive spoilage resulted from improperly designed refrigerator cases, from improper stocking of the cases to assure quick turnover, and from improper wrapping and labeling. Red meats quickly discolored from contact with the type of cellophane then used and in some cases the packages, not perfectly sealed, dripped blood on the customer.

4 From the very start, however, the public never refused to accept pre-packaged meats. They were extremely popular wherever they were introduced and, where pre-packaging was combined with self-service in super markets, the traffic jam was eliminated. Desirability of pre-packaging was established; it remained only to bring it down to a profit level by improvement of methods and materials.

Early experiments were mostly in the direction of central packaging plants to serve a number of markets in one community. It was felt that this would put meats into smaller markets which had no regular meat departments. But improper ordering, poor refrigerated case equipment and unintelligent handling by grocery clerks unfamiliar with meats forced the abandonment of this idea for the time being.

Central packaging—by the branch packaging plant, the wholesaler or chain store headquarters—is still the ultimate goal, for it holds the greatest possibility for mechanized, low-cost packaging. But until certain technical problems are overcome, the emphasis will remain, as it is now, on pre-packaging operations directly in the store of sale. The outstanding operations of the last ten years have been in individual, large super markets, where sales increases of 25 to 40% were regularly recorded.

Credit for putting self-service meats on a sound basis goes largely to the du Pont company, which early sensed the po-

tentialities of cellophane in this new form of packaging. First successful operations date from the time, about a decade ago, when du Pont went actively into the development—testing, teaching and guiding the food-store organizations toward the proper packaging materials and methods and the design and handling of properly refrigerated cases. Du Pont has kept a staff of sales engineers constantly assigned to this development, working in the field directly with stores and equipment suppliers.

It is a tribute to du Pont's alertness that to date cellophane has completely dominated self-service meats and so far as is known none of the other transparent materials has been given a serious trial. If they can compete cost-wise, some of the plastic films may be a postwar factor.

Meat packaging first proved itself when established to give better service to super market, rush-hour crowds. After several attempts, two companies marketed correctly designed self-service refrigerator cases. To counteract discoloration of the meat, du Pont invented and marketed the LAT type of cellophane for this specific use.

By 1941, experience and sales results had established pre-packaging as of real value in boosting sales and reducing costs of operation. Careful sales training and follow-through brought good results in each succeeding installation.

A key store of a large chain, which had always paid extra wages to butchers to encourage personalized service, after installing three self-service cases reported an increase in meat sales from \$4000 to \$6000 a week.

Reports from 34 scattered stores of this chain showed a 30% increase in sales with half of all sales from the self-service cases new business. Another chain found 60% of all sales from self-service cases to be new business.

The largest operator in the Middle West reported a 60% increase in meat sales as an average in 31 stores.

On the West Coast, the pioneers in 100% self-service meats found sales increased 20 to 30%, whereas the normal expectancy might have been a decrease until customers became accustomed to the new service.

By the end of 1942 there were 293 food stores operating 323



7 PHOTOS 4, 5, 6 AND 7, COURTESY THE PROGRESSIVE GROCER



5—Luncheon meats are big item, usually sliced in $\frac{1}{4}$ - and $\frac{1}{2}$ -oz. units, cellophane wrapped. Duplex scale weighs to $\frac{1}{2}$ oz. 6—Girls do weighing, labeling, wrapping, sealing, either with cellulose tape or small heat-sealer. 7—Girls keep cases constantly filled, neatly arranged. Back-loading case is needed.

self-service cases in 145 cities in 28 states. Thirty-eight different chains or super markets were participating, and some super markets had achieved 100% self-service on meats.

This represented the high-water mark of expansion to date. During 1943 both cellophane and meats became difficult of supply, and it is estimated that during the year about 20% of the stores having self-service cases were forced to discontinue their operation. It is known that during 1944 some of these cases came back into operation and with the manufacture of cases again permitted there has even been some expansion in certain areas, notably the Pacific Coast.

In an article in his October 1944 issue, M. M. Zimmerman, editor of *Super Market Merchandising*, declared on the basis of a personal survey that "Self-service for the meat and delicatessen department is not only here to stay but promises to be the accepted method of handling this department, with service meats the exception and not the rule. . . . Experienced operators . . . believe that the self-service method of selling meats is as logical and inevitable in meats as in groceries. . . . How soon this conversion will take place depends on how soon manufacturers of equipment and pre-packaging material will be able to supply the necessary facilities to the industry."

Mr. Zimmerman found six Pacific Coast super markets

100% converted to self-service in meats and many others in various stages of conversion. Without exception, they reported substantial increases in sales volume since making the change and overhead in some cases was cut in half. One store showed increases ranging from 98% in sausage links to 540% in sliced smoked ham; 168% in cooked hams to 1460% in sliced bacon half-pound packages—with an over-all increase of 144% in meat sales.

It is an axiom of self-service merchandising that the customer always sells herself more satisfactorily than any clerk can sell her. Actually, she tends to over-buy when she has the opportunity to look over a whole case full of ready-packaged meats and pick out what appeals to her. Striking increases in sales of luncheon meats and the otherwise less-popular cuts of fresh meats are regularly noted.

In addition to the increased volume, there is a definite decrease in the "hidden losses" in the meat department—shrinkage, favoritism and cash losses due to error or otherwise on the part of the clerk. With self-service all purchases are paid for at the central checkout. Meat cutters make more efficient use of their time, since they work steadily at cutting without any idling during sales lulls or interruptions from customers; girls do the packaging and labeling.

In today's successful installations the cutting, weighing, packaging and labeling are done either in a back room or at a counter directly behind the self-service cases. In the latter case it is still possible to give personal service to the occasional customer who may demand it.

In the large markets packaging is a streamlined operation. The cutter passes the piece to a girl who weighs it accurately, marks the weight and price on a printed label and passes meat and label to the wrapper, who uses LAT cellophane either cut to size or from a roll. Packages are closed either by heat-sealing (by a heating iron or in some cases by a foot-operated crimper); by tying with cord or tape, or by sealing with adhesive transparent cellulose tape. Packages are loaded in boxes or trucks and taken to the display case. In some cases, reserve stocks of packaged meats are kept for a short time in back-room holding boxes.

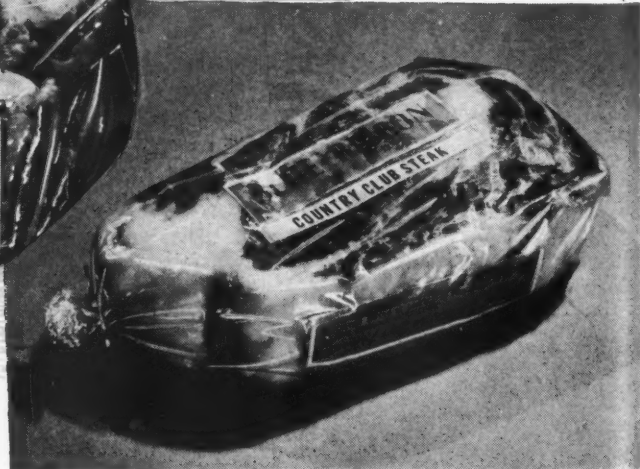
Since visibility is all-important, the labels are kept small,



8



9



10

8—Heavier cuts are often bound with colored cord. Note label's possibilities for brand promotion.

9—Variety cuts move faster when attractively packaged. This package is sealed with cellulose tape.

10—The end-tie method of sealing is used on this country club steak.



11

usually about $2\frac{3}{8}$ in. by $1\frac{3}{4}$ in. As a rule the labels are placed next to the meat, face up, under the cellophane, so they will not become detached from the package. These labels usually are made of parchmentized paper; they must be greaseproof, bloodproof and easy to write on with a pencil or ink which will not smear or fade out. Label paper must not react upon the meat to discolor it.

Labels are usually bordered and printed in color and a color contrast suited to meats is desirable. Experience showed, for instance, that blue borders were not good—they reflected an off-cast color on red meats. Red and green make good borders; blue or green is good for lettering. Design of the label usually includes a trademark and designation of quality, plus a self-service explanation such as "For your convenience."

Large operators wrap more than 100 meat items and labels are kept on the packaging line in racks, each item having its own label with the designation (pork loins, cube steak, cooked ham, etc.) pre-printed in bold letters. It is essential that each label provide for the writing in of these three items: price per pound, exact weight of the piece in pounds and half-ounce, and total price of the piece.

Some operators have been successful in attaching adhesive labels to the outside of the package. For some items such as baby franks and ground sausage, cellophane sheets pre-printed in colorful label designs have been used as combined wraps and labels. In the latter case items may be weighed to a pre-determined weight printed on the wrapper, or weight and price may be penciled in on spaces provided.

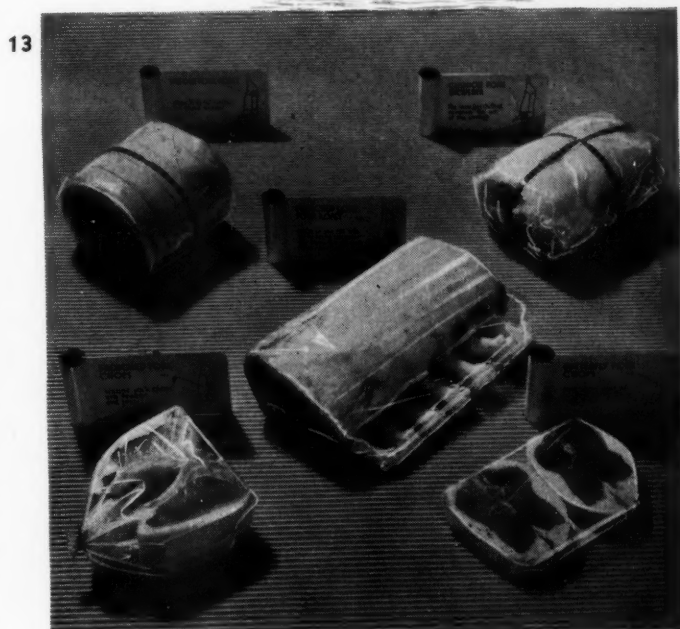
The lowest wrapping-cost operations employing cellophane in roll form uses the 8, 12 and 18-in. sizes for a majority of items, although a few stores also use 11, 15 and 16-in. rolls. Sheets cut to size also may be had, however, and these have the advantage of keeping supply cost to an exact figure.

Current practice runs heavily to the use of cellulose adhesive tape for sealing all openings, but this is a relatively expensive item—running 30 to 40% of the total wrappings supply cost—and it is hoped that eventually heat-sealing methods will eliminate it. Heat-sealing at present is not too desirable where it is necessary for the hot-iron to be pressed di-

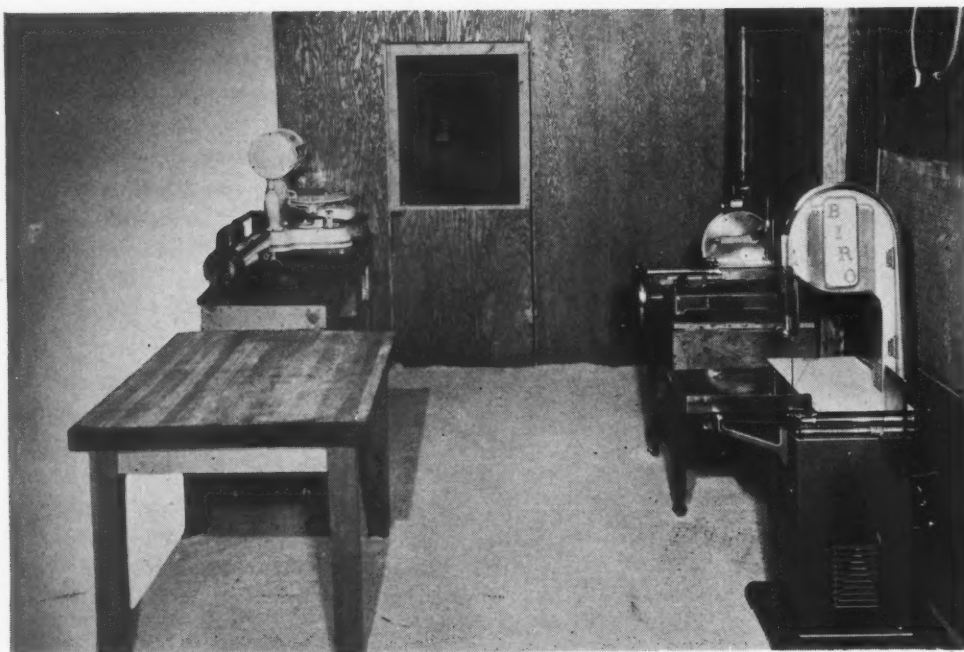
11—Packaged roasts lend themselves to fancy larding and decorative effects. Cod fat keeps cellophane away from red meat. Packages are bound with red tape for strength and eye-appeal. 12—Pig's feet and beef tongue look appetizing. Link and ground sausage are fast sellers. 13—Special packaging effects used on roasts, chops.



12



13



14—Typical super-market packaging room has duplex scales, roll cellophane, cellulose tape, cutting and wrapping table, slicer and band-saw. 15—Best labels provide for write-in of weight, price per lb., total price — use green and red colors. Loblaw's is 100-lb. greaseproof, blood-proof parchment for inside package; First National's is adhesive label for outside of package.



rectly against the meat, for—especially in the case of red meats—the heat tends to discolor the meat. If there is cardboard between the meat and the cellophane, the danger is less.

Discoloration of red meats after from 24 to 48 hours' contact with the cellophane is one of the principal problems which must be overcome. Currently, some operators put chops and steaks in a cardboard tray, or boat, with sides high enough to hold the cellophane away from the meat on the open top surface. On large steaks, two cubes of cod fat atop the meat will help support the cellophane.

Manufacturers of cellophane are working hard on the discoloration problem and it is expected that they will eventually have the answer to this—a wrapper which will heat-seal readily and have the necessary strength, sheen and low cost. The aim is to have a cellophane which will not discolor any meat in direct contact for a minimum period of three to six days.

Proper case management is an extremely important consideration. Self-service operations did not become successful until experience had established certain basic principles in case management which are now universally followed. It is necessary to anticipate buying habits in each store not only for each day of the week but almost for each hour of the day, so that (1) the wanted items will be there when they are

wanted and (2) stocks of each item will be kept steadily turning over within the time limits of safe packaging for each.

It is known, for instance, that roll roasts and heavy cuts will not sell on Monday, but are in demand toward the end of the week. Smart operators have a flexible but definite packaging schedule which starts on Monday morning and operates right through the week.

It is important to arrange packages attractively in the case, keeping in mind the shapes and colors of the meat cuts. The label must be correctly "spotted" to display the best part of the meat; for example, on the chine bone of a chop package and not over the "eye" of the meat. In no way, however, should defects in the meat be covered up; the butcher who conceals a poor pork chop in the middle of a packaged stack of six will lose a customer. What the customer sees must be truly representative, for housewives are very sensitive on this point.

Packages should be stacked in the case so that they can be inspected without too much handling. It is unwise to stock at one time too many packages of items—such as steaks—that invite close inspection, for the customer seems to want to see every one and leaves the case disarranged. It is important to keep an attractive display by frequently re-arranging packages that have been left out of place. Rotation of packages to encourage sale of the older ones first is essential, and some operators code the packages with a 1 for Monday, 2 for Tuesday, etc.

The two most successful types of cases now in operation both are open at the top. Experience shows that this is psychologically important, as the housewife shies away from the opening of hinged or sliding doors. Apparently a large amount of impulse buying results from the ease with which the shopper may pick up and examine a piece of packaged meat. Refrigeration is successfully maintained below a certain line in the case by means of forced circulation of frigid air and it is important that meats not be stacked above this line. Many of the cases are lined with mirrors at the back to double the display effect of the racks of meats; indirect lighting is thrown on the meats and the fronts of the cases are solid plate glass. Sprigs of parsley or other greenery help to give a display-window effect.

Experience has shown that the "shelf life" of packaged meats—that is, the length of time which meats properly packaged will remain in good, attractive, salable condition in an efficient self-service refrigerator case—with present materials varies from one to seven days, as follows:

	Days		Days
Beef		Poultry	
Top sirloin roast	2	Frying chicken	4
Face of rump roast	2	Chicken	4
Chuck roll roast	2	Cut-up fowl	4
Prime ribs roast	3	Turkey	4
Pot roast	2	Duck	4
Club roast	2	Smoked Meats	
Sirloin steak	1	Hams	7
Rump steak	1	Canadian bacon	7
Club steak	1	Special bacon	7
Tender knived steak	1	Smoked dry beef	7
Hamburger	1	Smoked butts	7
Beef for stewing	2	Smoked shoulders	7
Shin bone	2	Piece bacon	7
Short ribs of beef	2	Scotch hams	7
		Tongue (whole)	7
Lamb		Prepared Meats	
Legs	4	Skinless franks	5
Kidney chops	3	Dinner franks	7
Rib chops	3	Boiled hams	3
Stewing meat	3	Pressed hams	2
Forequarter chops	4	Minced hams	4
Lamb fores—plain or rolled	4	Spiced hams	4
Veal		Veal loaf	3
Cutlets	1	Luxury loaf	4
Chops	2	Tasty loaf	4
Roast	3	Combination loaf	4
Pork		Liverwurst	3
Fresh shoulders	3	Salami	7
Loins (roast)	3	Bologna	4
Sausage meat	4	Jellied corn beef	4
Chops	3	Jellied tongue	4
Packaged link sausages	4	Blood pudding	4
Fresh ham	4	Pork and chicken loaf	3
Salt pork	7	Pickle and pimento loaf	4
Briskets	7		

A good meat package is clean-looking inside and out and free from grease. The folding of ends and side seam is easily accomplished by using the confectioner's or rolled folds. This tucks in the raw edges of the wrapper and reduces the risk of tearing while being handled by the customer; it also locks in any excess liquid due to meat leakage. Absorbent paper is sometimes used on the bottom side of bloody units like rolled roasts. Pork products must be handled so that grease smearing of the cellophane is held to a minimum. Wrapping table tops must always be kept clear of grease and blood.

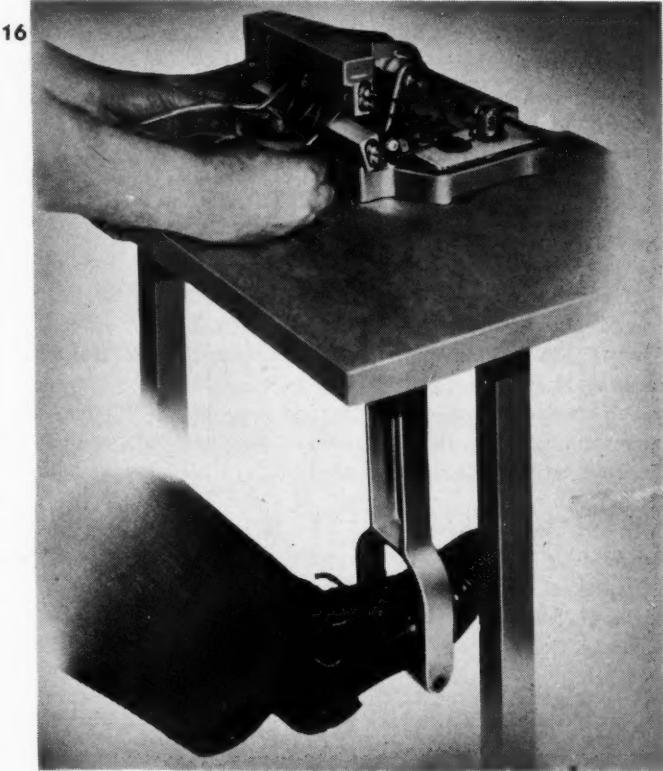
The package must be strong enough to withstand reasonable customer handling. Proper cutting, meat arrangement and

proper folding will usually take care of this. Sharp edges of cleaver or band-saw-cut bones may cause puncture of the wrapper.

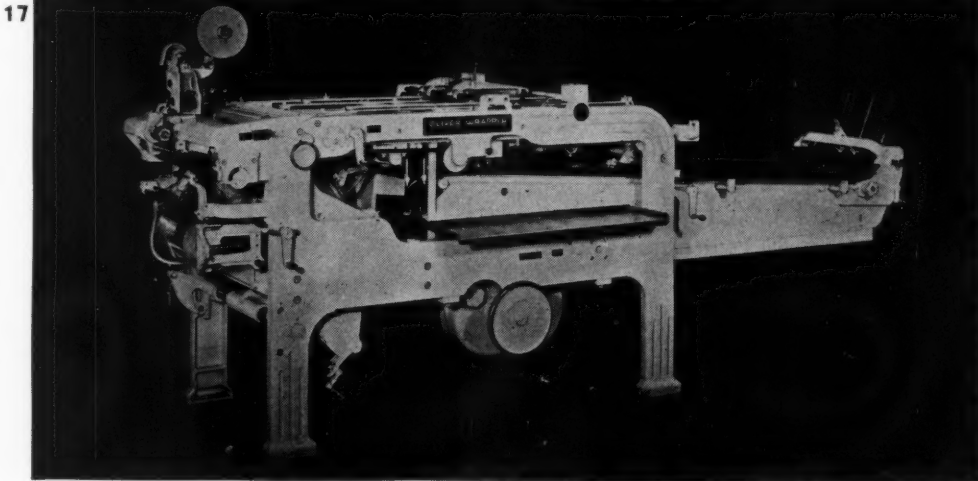
At present, heat-sealing is confined to the smaller packages and more stable types of meat, using LAT cellophane and, when available, LSAT. Cellulose adhesive tape gives a good, tight, leakproof package for the majority of items. Larger and heavier pieces can be bound and tied with colored cord or tape, which gives a nice decorative effect to the package.

Cost studies show that the increased cost of materials necessary to pre-packaging is more than offset by the saving resulting from increased labor efficiency. There are of course many other savings, not yet fully charted; the reduction in shrinkage of meat stocks, for one, will generally pay the packaging-supplies bill.

Sales per man are increased as much as 50% on a dollar basis. Dollar sales per square foot of floor space are boosted by as much as 100%, partially due to the increased volume that almost invariably results from self-service and partially



16—Foot-operated crimper is popular heat-sealer for small meat packaging operations. 17—This type of wrapping machine is adaptable to larger meat operations. Designed for bakery use, it wraps and seals product in cellophane and affixes a thermoplastic roll-type label.



from the reduction in the amount of floor space required. Sales from each 11-ft. case average \$1500 to \$2000 weekly, and the average store shows, over-all, better than a 20% increase in annual dollar volume in meats when the change to self-service is made.

Here are case histories of store operators who made the change from service to self-service:

Store "A": One of the first to realize the possibilities of self-service meats, this company started operations in May 1941 and now operates 14 cases in 12 eastern stores.

The management says: "We can sell whatever we put in the case. It is a shopper's paradise. But you must do a good job of trimming and packaging. Junk will not sell. Your success depends upon correctly meeting customer desires."

Because they trim closely, these stores charge slightly more for packaged than for service meats, which is contrary to practice elsewhere. Sales per case are about half the volume of the super-market chains, but they claim to sell more profitable meats. The average in this company is approximately \$800 per case per week, of which \$480 is figured as added business, representing a 15 to 20% increase for the meat department as a whole.

In the service department the operating cost is 6% for direct labor and 1% for supplies, a total of 7%. In self-service, direct labor is only 3% and supplies 1%, a total of 4% and a net saving of 3%.

Store "B": This company at peak was operating 77 self-service meat cases in 44 towns. It has extensive expansion plans for postwar. Some stores will be 100% self-service on meats.

Average weekly sales per case were over \$1300, and the company conservatively estimates a 10% increase in total over-all meat business, indicating that more than 25% of the meat sold self-service was new business.

Self-service has shown a net saving of about 1 1/2%. This is a conservative estimate, not taking into account reduced overhead on larger volume, increased grocery business and decreased meat spoilage and waste.

In considering postwar designs for new stores, the company figures that it can save 30% in meat department floor space by going self-service.

Careful study has shown that the customers do get more accurate weight and better-trimmed cuts; they buy more

meat per call and this alone helps to solve the week-end-peak problem.

The company has prepared labels for about 120 items to be sold in self-service cases. The case will hold only about 34 items on an orderly display basis, but neighborhoods vary and demand varies from day to day and season to season, so it has been found advisable to package in all about 120 items. The company has a standard blueprint for dressing the case, putting the large-volume numbers at the end so they will not fall over and can be stacked high to the top of the refrigeration line.

Meat is cut with standard equipment in a special, screened-in back room. There is a special wrapping table with all the necessary equipment, including half-ounce graduation duplex scales, label racks, rolls of cellophane with flexible metal cutters, boxes of pre-cut cellophane sheets and cellulose tape dispensers. Cardboard trays are used with red meats to avoid contact with the cellophane. It has been found that one man can cut and wrap about \$800 worth of meat a week.

Store "C": This eastern chain, which had always featured personalized meat service, started self-service in the fall of 1941 in one very large super market. Two cases were installed and a third added later. Self-service was soon extended to two more stores of the chain and plans for 15 more stores were ready when war conditions intervened.

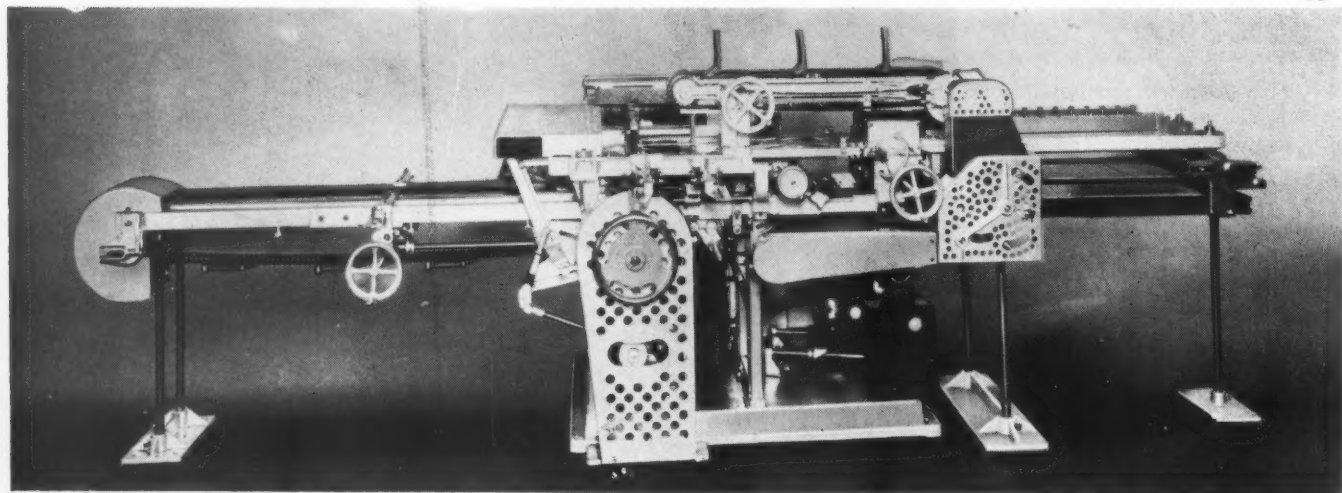
Management says consumers who try self-service "Love it and prefer it. Some warm up slowly, some fast, but once they buy this way they never go back to the old way."

Sales in the leader store climbed from \$4000 a week to \$6000 and held this level. Study shows that cost of supplies increased about 20%, or from 7/10 of 1% to 9/10 of 1%. Efficiencies of operation more than offset this extra cost. Labor costs dropped to a net saving of 1 1/2%, amounting to \$90 a week or \$4680 a year in the one store. With 100% self-service, management expects there will be a 2% net lower cost of operation over-all.

"We'd use self-service even at an equal cost," management says, "because we know of no other way to get a 50% increase in sales. Furthermore, butchers worthy of the name are hard to find—one who is also a good salesman is rare. Few younger men are attracted to this business. This is the answer to a real problem in our business."

Store "D": This chain (Continued on page 142)

18—This machine will take meat cuts in cardboard trays, wrap and heat-seal them and affix the price label if desired. It is adjustable to a wide range of sizes and has a speed of 90 packages a minute.



NO SHOW . . .

We still have a war to win!

There will be no Packaging Conference in the Spring of 1945. Reluctantly, but with the snappy salute of a good soldier, the American Management Assn. has canceled arrangements for its annual exhibition, although there is no doubt that this year a new high would have been attained in the size and importance of that gathering.

Circumstances being what they are, however, the only thing to do was to cancel the meeting. One big job confronts this country, and nothing can be allowed to interfere with that. Few people in our field—and we have consulted many—take any other attitude. They are willing to suffer any deprivation and pocket any loss if by so doing they can speed the war's end. Just one more score, they say, which we have to settle with the brigands who have shot the world's peaceful progress to hell.

Without question, a good case could have been presented for holding a meeting like this one which represents as it does the entire field. Commercially, it affords manufacturers of packaging materials and equipment an unusual promotional opportunity. Its importance to them may be measured by the fact that every inch of available exhibit space was contracted for months ago, with a long list of disappointed applicants turned away.

More important still, meetings like this function as a means of exchanging and disseminating information in a field too new and too fluid for textbooks—activities which make use of hundreds of devices and materials to safeguard thousands of products on their way to the consumer. From the educational viewpoint, the cancellation of this meeting will mean a deprivation to the many serious-minded executives who have attended its sessions in the past.

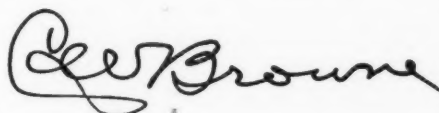
During the past two conferences, these sessions

have made a direct contribution to the war effort. War packaging, it will be remembered, was the need of the hour. The meetings discussed every phase of the subject. The service branches were present in force and the conferences afforded them an opportunity—of which they made full use—to discuss their requirements with suppliers and to learn valuable lessons from the field.

Cancellation of this meeting, however, by no means implies that packaging progress will be halted. It is true that all packaging materials are tight and we are making use of all possible adaptability and ingenuity just to make things do for the duration. For this reason, many developments—if exhibited at all—would have to carry a tag reading, "You can't have this until after the war!" But the work of the laboratories and the researchers is not being interrupted. It would be unthinkable for that work to be sidetracked. Our national genius, happily, turns its powers not to the production of destructive material but toward things which make for human betterment. The packaging technician is ready with a wealth of new materials, methods and equipment. The package designer, too, without any drain on the limited supply of materials, is showing his clients ways in which packages may become more effective as merchandising aids, for tomorrow as well as today.

The alert packaging executive will rely more than ever on his business publications to keep abreast of technical advances and design developments. If important conventions must become war casualties—and that seems unavoidable—the business press must take on still greater responsibility. The dwindling supply of paper must be used carefully and conscientiously to make sure that every item to which space is given meets the acid test: Will it serve the readers?

This publication accepts that responsibility.



EDITOR-IN-CHIEF

Program for '45 adopted by Packaging Institute

Meeting for the first time under the presidency of Walton D. Lynch, the board of Directors of the Packaging Institute formulated on Jan. 10 a broad program of research activity and voted, unanimously, to cancel the semi-annual dinner meeting, previously scheduled to be held in April during the A.M.A. Packaging Conference. The A.M.A. conference also has been canceled for 1945—both actions in deference to the request of the Office of War Mobilization.

Packaging Institute directors reviewed the work of their principal committees. On behalf of the Technical Committee, Chairman Charles A. Southwick, Jr., reported the establishment of 25 tentative sets of specifications, covering a wide variety of packaging materials, which it is hoped may soon be completed and released.

Among the new projects proposed by President Lynch are:



W. D. Lynch

(1) Completion and distribution of the glass packaging manual being prepared by H. A. Barnby.

(2) Development of basic statistics showing the importance of the Packaging Institute to American industry.

(3) A series of conferences with executives of all trade associations in the package materials, producing and machinery fields, as well as those representing the principal package-using industries, with the objective of compiling a history of package development

and testing during World War II.

(4) The forming of a small but qualified Packaging Institute Advisory Board as a source of information.

Organization and membership of the Technical Committee were completed during the regular Institute conference last fall. The committee was first formed two years ago by Mr. Southwick, at the request of Joel Y. Lund, then president of the Institute. When it became apparent that the first small group of three could not properly cover the entire packaging field, a larger committee was sought.

The new committee consists of twelve members. Each of these members covers a particular group of package forms or a phase of the packaging industry and each of the members has a working group of five other persons selected to broaden the base of the committee work.

Following is the membership of the Technical Committee:

Chairman

C. A. SOUTHWICK, JR., Shellmar Products Co.

Vice Chairman

F. S. LEINBACH, Riegel Paper Co.

Sub-committees and directors

Rigid Metal Packages and Fibre Cans—ROGER V. WILSON, Continental Can Co.

Glass Containers and Closures—H. A. BARNBY, Owens-Illinois Glass Co.

Shipping Bags and Waterproof Bags—CARL HARTMAN, St. Regis Paper Co.

Plastic and Transparent Films—A. F. WENDLER, E. I. du Pont de Nemours & Co., Inc.

Set-up and Folding Cartons—WALTER T. RITTER, Chicago Carton Co.

Machinery—JOHN TINDAL, Package Machinery Co.

Adhesives and Laminants—A. B. CROWELL, JR., Union Paste Co.

Converted Materials, Metal Foils, Bags (other than paper)

—KARL PRINDLE, The Dobeckmun Co.

Packaged Products—T. R. BAXTER, Standard Brands, Inc.

Paper Base Materials—W. H. GRAEBNER, The Marathon Corp.

Lacquers, Coatings and Waxes—F. S. LEINBACH, Riegel Paper Corp.

As a result of the first meeting of this group last November the purpose of the Technical Committee was developed and is:

1. To develop a scientific, engineering basis for packaging by
 - (a) determining methods of testing, measuring and evaluating packages, their materials, and the packaging requirements of products;
 - (b) studying the use requirements of packages and the significance of test results;
 - (c) developing a nomenclature and definitions for packaging.
2. To suggest and arrange for the technical papers to be presented at Packaging Institute meetings.
3. To cooperate with other groups, associations and Government agencies with similar scientific purposes.
4. To develop and review curricula for technical courses in packaging.

Furthermore, the decision was made that all of the members of the Technical Committee and its sub-committees must be from industry, but that means shall be established for cooperation and contact with the various Government services and laboratories. Further decision was made that the sub-committee on shipping bags or any other group should not include any other type of shipping container. In other words, currently this committee will confine its activity to packaging, and will not concern itself with packing except in the case of shipping bags. It was necessary to outline the coverage and activity of each of the sub-committees to prevent overlapping and duplication of effort.

In most cases, the members were able to present lists of five sub-committee members which met the approval of the Technical Committee.

Based on the discussions at this meeting, the various members of the Technical Committee are first going to complete their sub-committee membership and then begin study of the group of packaging specifications tentatively assembled.

The intent in establishing a committee of this composition and structure is based upon the thought that by submitting a packaging problem to this diversified group, representing as it does all steps of packaging from the product manufacturer, machine manufacturer and the maker of materials and packages, it will be possible to obtain the broadest of experience and background. Problems will be presented to the membership of the Technical Committee either by correspondence or a meeting, and the committee will then present the problem to each member of the sub-committees by correspondence. This means that each project will be presented to a total of 67 persons, each of whom is a specialist in some phase of packaging activity.



1—An airplane view of the main building of the Forest Products Laboratory located at Madison, Wis.

Forest Products Laboratory school of packaging

by Joseph F. Stilling*

The School of Packaging conducted by the Forest Products Laboratory at Madison, Wis., represents the closest approach yet to an institution of higher learning in what has become a very real science.

In 30 months the school has graduated 164 classes, sending out 10,128 technicians equipped with at least the fundamentals of package engineering and the ability to distinguish between good and bad practices. Because of the pressing need for trained men, these wartime courses have been brief but very intensive.

Limited as it has been, necessarily, to the needs of the armed services, and with preponderant emphasis on packing for military export shipment, the school represents a long first step toward the inevitable goal of formalized, technological education in all phases of packaging. Its methods and accomplishments are worthy of the attention of the entire packaging field.

Established in 1910 as an integral part of the United States Forest Service, the Forest Products Laboratory is a scientific and technical research institution whose function is to aid in protecting and enhancing the value and utility of forest products. The University of Wisconsin erected a building for the Laboratory and entered into a cooperative agreement with the Forest Service for maintaining the establishment. This cooperative agreement has been continued—although in 1932 the Laboratory moved into a much larger building that was constructed with Government funds on a 10-acre site donated by the University.

After the start of the war, the Division of Matériel Con-

tainers was established to take over all packaging research and development required by the Laboratory's wartime packaging program, particularly its cooperative undertaking with the Armed Forces. Pre-war packaging activities had been carried on by the Division of Timber Mechanics.

While the packaging research conducted by the Laboratory during World War I was highly important and productive in reducing shipping losses and in effecting great savings in container material and shipping space, it was relatively small compared to the accomplishments of the Container Division in the current conflict.

Immediately prior to this war, the Laboratory's packaging work was in a transitional stage, the fundamental work on the use of wood in containers having been practically completed and data compiled relating to the basic properties of wood and the principles of wood container design. It appeared a logical and important development to make a similar thorough investigation of fibre containers and their component materials. The necessary equipment to make both cylinder and Four-drinier kraft board and other types of paperboard were installed, therefore, and research started on the different types.

Limited studies of fibreboard containers had been made in 1928 and 1933, but it was not until 1938-39 that a serious

This report on the nation's first comprehensive school of package engineering was prepared by a packaging man on the basis of his experience as a student at the wartime short-course.

* Secretary, Packaging Committee, Anaconda Copper Mining Co., N.Y.C.

effort was made toward a complete study. That work was nicely under way when war interrupted the fundamental fibreboard research and broadened the program to practical problems involving all the main types of containers: nailed wood crates, nailed and wirebound boxes, cleated boxes, corrugated and fibreboard boxes of various types (including "V" boxes), barrels, plywood and fibre drums, multiwall paper bags, textile bags, bales, bundles, metal drums and cans.

While most people think of the Forest Products Laboratory in terms of wood research, its primary objective is to further the use of *all* forest products—including paper and fibreboard—which are part of the packaging picture. Furthermore, through its close correlation with other phases of packaging, close attention necessarily is given to corrosion prevention involving materials other than forest products. For instance, research in the use of steel cans as moisture-vapor barriers has recently been conducted in connection with what is known as Method III preservation.

The Forest Products Laboratory has effected significant savings in cubic displacement in packaging and loading commodities for overseas shipment. The average saving on containers redesigned by the Laboratory has been conservatively estimated at 15 to 18%. According to Brig. Gen. J. S. Hatcher, Chief of the Ordnance Field Service Division, an average of four ships now can carry the weapons which formerly required five.

The elimination of useless air space in crates and boxes together with determination of the minimum weight of lumber needed to protect a given item, meant during the first year of the war, for Ordnance only, a saving of 58,000,000 bd. ft. of lumber worth \$2,500,000. During 1943, exports of war supplies were greatly stepped up and shipping lumber consumption was about 16.5 billion bd. ft., of which 12.5 billion ft. was for agriculture and military items, including all military services. A conservative estimate of the annual saving in this type of lumber would be one billion feet. At an estimated value of \$40 per thousand ft., this would amount to \$40,000,000 annually. The lumber saved would have required 40,000 freight cars to transport.

The Armed Forces realized that no other agency was so well qualified or equipped as the Forest Products Laboratory to handle efficiently the job of teaching military and naval per-

sonnel the engineering principles underlying sound packaging and how to apply them to current problems. Consequently the Laboratory was approached and arrangements were made whereby the various branches of the Armed Forces reimburse the Forest Products Laboratory for courses given to their own and to contractor personnel.

The Laboratory recognized that it was essentially a teaching problem. A new division—the division of Technical Service Training—was established. The personnel of this division has been built up of people of known teaching experience and ability, recruited, for the greater part, from colleges and universities throughout the country. These men have become specialists in various phases of packaging.

Starting in April, 1942, this division has given a continuing series of packaging courses for the Army Ordnance Department, the over-all Army Service Forces Organization, the Army Air Forces and the Navy, as well as special sessions for the Signal Corps and Corps of Engineers. Similar courses have been given for industry—four sessions were given in the fall of 1943 for representatives of industry, in cooperation with the American Management Assn. One course was given for the Assn. of American Railroads and one for Kimberly-Clark Corp.

The streamlined war packaging course occupies just six fact-filled days.

The class meets early on Monday morning for a tour of the laboratory and general discussion. Representatives of the laboratory and of the Armed Services explain the hazards of wartime shipping and other factors affecting container design; the need for properly packaging matériel and causes of damage in transit; palletizing and materials handling, and the Army-Navy packaging specifications.

In developing specifications increased reliance is being placed upon detailed "damaged shipment" reports and photographs of package failures. But the specifications still rest primarily on the Laboratory's own testing—tumbling, immersion, air pressure and compression, MVT rate, grease-proofness, bursting and tearing strength, folding and fungi resistance.

There is increasing emphasis on proper interior packing. It is felt that most manufacturers have learned the essentials of shipping container design, but there is still a serious lack of



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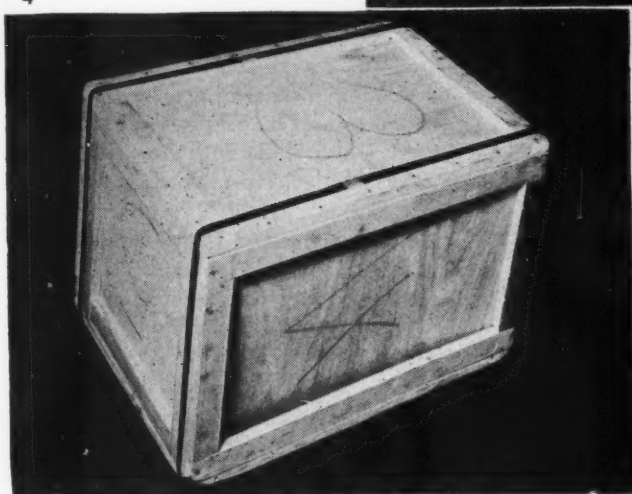
2—Pictures like this, showing a damaged car-load shipment of angle irons, illustrate need for Laboratory's training. These boxes did not take into consideration the combination of heavy loads and rough war-time handling.

3—Laboratory has testing machines to simulate every condition of actual shipment. Shown is a "weaving" test on a braced crate. 4—Illustrating Laboratory recommendations for a plywood-paneled shipping box. Lengthwise strapping has been shown to give greater resistance to rough handling than girthwise. Machine-driven 17-gauge staples are used.

3



4



species, strength, defects and the effect of moisture content. This leads naturally into a discussion of container fastenings—nails, screws and bolts, and their relative holding power; the effect of clinching nails and the relationship of wood characteristics to holding power of nails and screws.

The Laboratory prefers etched nail surfaces to cement-coated shanks, for the reason that the withdrawal resistance is more lasting and students of the course are given a simple formula for chemical etching of nails. End-grain nailing is condemned, as one of the most common causes of failure of interior blocking and bracing.

Metal strapping, both flat and round, is discussed in detail. Strapping has two principal functions: to prevent withdrawal of nails and to distribute the load.

Wirebound boxes are declared to be excellent containers for objects not subject to destruction by distortion, or for objects which in themselves are strong enough to support the box.

Another lecture concerns the utility of plywood for containers; the styles of plywood boxes and their characteristics and advantages; determination of sizes of parts, fastenings and reinforcements; designing of boxes for specific requirements; prevention of fungus growth in the glue line, and proper lengthwise strapping.

The engineering principles underlying proper construction of nailed wood crates are sketched and some tips given on the placement of trusses and diagonal members. The advantages in using top bracing struts to resist squeezing are shown and the principles of good joint formation demonstrated.

Considerable attention is given to methods and techniques of adequately fastening contents within exterior containers by means of interior blocking and bracing. The principle of flotation can often be applied even to heavy loads with good results. When the item being shipped cannot withstand pressure and is to be fastened only to one face of the container, it is recommended that at least two inches clearance be provided on the other faces.

Anti-skid plates are recommended to prevent movement of load within a car, and in this connection the three principal forces acting on carloads—lengthwise force, crosswise force and vertical or rhythmic oscillation—are explained.

One session is devoted to consideration of Signal Corps specifications, with special reference to container design and in-

cooperation from many in providing adequate interior packing to protect against corrosion—a pressing problem now that matériel is flowing in large quantity to tropical areas of the Pacific theater. It is stated that more matériel is destroyed by corrosion than by all other causes combined.

Other packing problems given emphasis are improper blocking, bracing and cushioning, improper carloading, improper marking of shipments and lack of identification on interior protective wrappings.

In the current critical shortage of packaging materials, manufacturers are warned to guard equally against under-packing and over-packing. The one may result in loss of the product through damage or corrosion; the other in a waste of irreplaceable packaging material. Students are shown slides of flagrant cases of over-packing; for example, two tiny camel's hair brushes packed in excelsior in a box of one cubic foot.

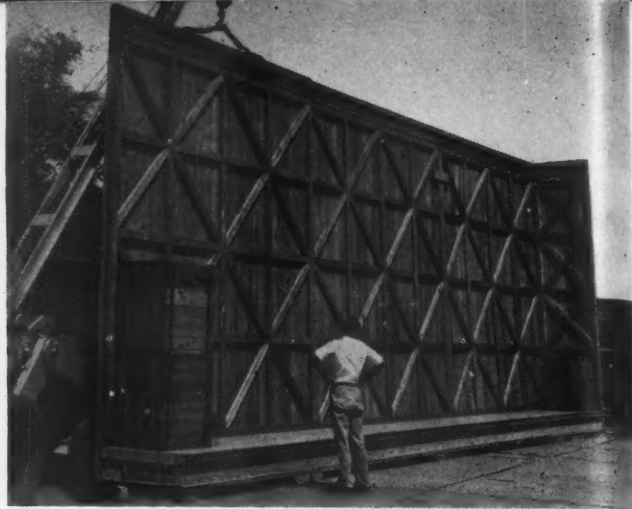
Many manufacturers question the necessity for enclosing properly cushioned items such as glass or ceramic insulators in a waterproof case liner. It is shown, however, that without the barrier water may destroy the cushioning effect of the packing, permitting the items to come into contact with each other with resultant damage.

The Laboratory tour includes observation of processes for making veneer, plywood and paper; testing of materials methods of seasoning wood, etc.

Students are given a comprehensive lecture on the characteristics and properties of container woods—the grouping of



5



6

5—Tripod for M-5 anti-aircraft gunfire director formerly was shipped assembled in box (left) which required 89 bd. ft. of lumber, 48 cu. ft. of space. After extensive study, a Laboratory expert designed the wirebound veneer box (right) in which tripod is shipped collapsed with a saving of 55% in lumber and 78.5% in cubage.
6—Forty-foot crate for bomber wing showing application of the truss principles worked out at the laboratory.

terior blocking, bracing and cushioning of specific items. As a matter of education, students are then required to write specifications for interior and exterior containers, cushioning materials and waterproofing methods and materials, as applied to various specific items.

Fibreboard and fibreboard containers are taken up midway in the course: solid and corrugated board for interior and exterior containers; the manufacture and properties of fibreboard; box assembly; styles of boxes, seals and closures. The relative merits of solid fibreboard and A, B and C flute corrugated are pointed out, and the differences between Army-Navy specification and TAPPI tests explained.

Demonstrations show how the directions of fibres affect box strength. The discussion includes the effect of relative humidity on bursting strength of container boards, the use of corrugated board and its component parts as engineering materials, and the various factors which govern the compressive strength of fibre containers. Adhesives—particularly the water-resistant types—are given special attention.

The study of corrosion prevention covers the causes of corrosion, the necessity for protecting metal parts, permanent preservatives and the cleaning of metals in preparation for packaging. A straight-line production setup including cleaning, drying, preservation and wrapping is recommended.

Approved cleaning methods include solvent cleaning by means of immersion, brushing or spraying; vapor degreasing; alkaline cleaning by means of immersion, spraying and electro-cleaning and emulsion cleaning by spraying and soaking. Drying may be by means of oven, compressed air, infra-red lamps or wiping. Preservation methods covered include hot and cold dipping, spraying, brushing and flow-coating.

It is urged that cleaning by immersion be used wherever possible, employing white neutral naphtha or various patented solvents. The advantages and disadvantages of the next most practical method of cleaning—vapor degreasing—are explained in considerable detail.

While certain preservatives may be applied by spraying, if heated, the recommended method is the hot dip. Various preservatives and their applications, identified by Army and Navy specification numbers, are treated in detail.

The session on wrapping of treated articles resolves itself into an explanation and rationalization of the numerous grades and specifications which govern wrappings.

It is pointed out that Grade A and/or Grade C greaseproof

wrappings are to be used for an article which can be damaged by corrosion. Grade A materials are acid-free and are colored red on one side, the red side to be placed next to the product. Grade C wrapping papers are acid-free, moldable and tinted green for ready identification. Grade B wrappers are not acid-free and may have no pigmented color; they are to be used where a slight amount of corrosion would not damage the article. All greaseproof wrappers are graded by bursting strength, as follows: Type I, 60 points minimum; Type II, 40 to 59 points; Type III, 20 to 39 points.

Wrapping methods I, IA and II are covered in great detail, as to acceptable wrapping materials and techniques.

Method I is defined as a simple, unsealed wrap, using Grade A or B papers, which is greaseproof, dustproof and affords mechanical protection. This method is to be used only for articles that have been coated with a hard-film preservative.

Method IA packages may use Grade C paper sealed with wax; Grade A paper overwrapped with waterproofing material; plastic coating, or heat-sealed water-resistant pouches. The water-resistant feature distinguishes Method IA from I, but articles wrapped by this method still require light preservatives. Three types of conforming IA wraps are presented: the doughnut, the envelope and the spiral wrap and tips on the handling of specific types of articles are given. The spiral wrap is not generally recommended.

To make a non-conforming wrap, the article should be placed in Grade A greaseproof paper and then placed in a carton. The carton is wrapped in C material, using the lock fold for the top seam and lap folds at the ends. The package is then dipped in wax.

For wax dipping, the laboratory recommends the use of a thermostatically controlled heating tank in which heat between 170 and 190 deg. F. is applied to the wax from several surfaces. The double-dip hand method of dipping is recommended, to be followed by a leak test by one of several procedures outlined.

For pouches, the heat-sealable laminated materials which include metal foil are favored. Advantages and disadvantages of various kinds of cushioning material are discussed.

Method II, employing continuous moisture-vapor barriers and interior desiccants, is thoroughly covered. The Laboratory does not approve of entirely exhausting air from airtight bags because of the strain which this places on the bag;



7



8

7—The Forest Products Laboratory helped develop the new Method III packaging in which parts are surrounded with dunnage pre-molded of hair, fibre or pulp. The part illustrated is an aircraft starter. 8—Showing the starter assembled with dunnage in place and ready to be placed in a metal can with silica gel. This method of packaging provides exceptional protection against corrosion when the outer can is tightly sealed.

it is considered a much safer practice to mold a bag around an item by hand to remove excessive air.

Students of the course are now being given details of the new moisture-vapor barrier specification AXS-1322, which distinguishes between various barrier materials according to their efficiency. Type I barriers are classified as those which have an MVT rate per 100 sq. in. per 24 hrs. of not more than 0.05 gram; Type II, under 0.15 gram, and Type III, under 0.25 gram. The peculiarities of the several standard barrier materials are pointed out; as, for instance, the fact that Pliofilm heat-seals readily at 240 deg. F. but has an MVT rate of 0.32 gram, while Saran is difficult to heat-seal, in the narrow range of 310 to 325 deg. F., but has excellent MVT resistance. The lead ring method of closing a Saran pouch is recommended.

Rigid metal moisture-vapor barriers—used in what is now generally known as Method III packaging—classify as Type I barriers, having an extremely low MVT rate. This type of container is undergoing tests for loads up to 1,000 lbs., and is considered a good package if properly sealed.

One point stressed is that moisture-vapor barriers alone are not sufficient to prevent corrosion. Unless silica gel is

used as a desiccant inside the package, the barrier may actually accelerate damage by acting as a humidifier. A simple formula for determining the minimum amount of silica gel for one year's protection is given.

At the final session students are given an opportunity to clean, wrap, dip and label various items of equipment, to check the information they have gathered on these functions.

In addition, considerable attention is given to the new methods of packaging Ordnance items by dip-coating with hot ethylcellulose stripping compound. The Laboratory recommends the double-boiler type of equipment for melting the compound, with heat transmitted to oil in the outer boiler and in turn evenly transmitted to the preservative. It is stressed that a temperature of about 350 deg. F. must be evenly maintained. An advantage cited for this method of packaging is that it affords a considerable degree of mechanical protection as well as inhibiting corrosion.

Students are shown how to make a greaseproofness test, an MVT test, a dry indicator test for water-resistance and Mullen tests of various container boards.

Methods of manufacturing water- (Continued on page 148)

9

9—Above—Scientific interior blocking of boxes and crates to prevent shifting of articles is strongly urged. Below—machine gun with Method I wrap, in place in box. This box, developed at the Laboratory, saves 36% in cube, 28.5% in lumber and 38% in tare weight over the container formerly used.



1—Compartment box with die-cut ventilation holes has become standard in hatchery industry. This design uses glued-on sticks to assure air space between the cartons.



Chick Boxes

The special chick shipping boxes supplied to hatcheries today are as little comparable to the saddle bags in which the ancient Egyptians packed their newly hatched poultry as the modern trains are to the camels and donkeys on which those Egyptians transported chicks from their underground, fire-heated hatcheries.

At present, the manufacturing of boxes for shipping day-old chicks is a branch of the fibreboard container industry that is completely dependent upon another business, the hatchery industry. Thus, the tremendous growth of the hatchery industry during the last few decades has indirectly caused the expansion of the chick box business. However, this has not been a one-way relationship. At first, practically all the business of the hatcheries was mail-order and, therefore, without a satisfactory shipping container it would have been impossible for the hatchery industry to reach its present size. The hatcherymen, themselves, set up the standards for the boxes in use today for no one realizes so well as they the importance of a good shipping container to their trade.

When, in the early part of this century, the commercial shipping of baby chicks began in the United States there was no standardized container in use. Baskets, shoe boxes, converted egg cases, crates and tiers of homemade wooden boxes with burlap covers, of varying sizes and often with inadequate arrangements for ventilation, were all tried by various hatcherymen at first in their attempts to find a shipping container that would satisfy the special conditions involved in shipping baby chicks. Packaging problems involved in the

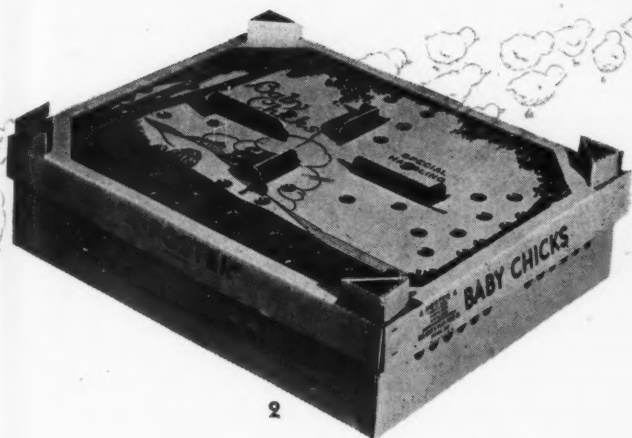
shipping of day-old chicks are numerous and they were essentially the same in 1910 as they are today.

The usual factors of attractive appearance, ease of assembly, economy and strength must be considered. As the volume of business of the hatcheries increased, it became more and more important that the containers used be of a type that could be assembled quickly and easily. In connection with economy, it is desirable that the boxes, although strong, be light in weight in order to lower parcel post or express charges. Economy is also important because re-use is impracticable due both to the danger of disease transmission and to the fact that it would be difficult to collect the used containers except in cases where the hatchery delivers the chicks by truck instead of sending them by mail or express. For all these reasons, wooden boxes were soon found to be too expensive, as well as heavy to handle and difficult to store and assemble.

But in addition to these, there are special problems due to the nature of the merchandise being shipped. For instance, it is necessary that these boxes be especially sturdy to resist crushing, for they may be stacked in high tiers and it is impossible to strengthen them by close packing inside since some space must be left for air for the chickens.

Fortunately, one of the most difficult problems usually present in shipping live creatures need not be considered in this case. A newly hatched chick lives on stored egg yolk and needs no food or water for approximately three days. This simplifies both the packaging problem and shipping arrangements. It is merely necessary to see that the chicks





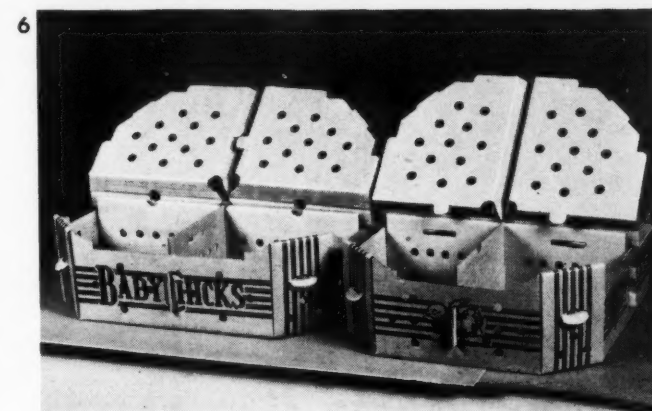
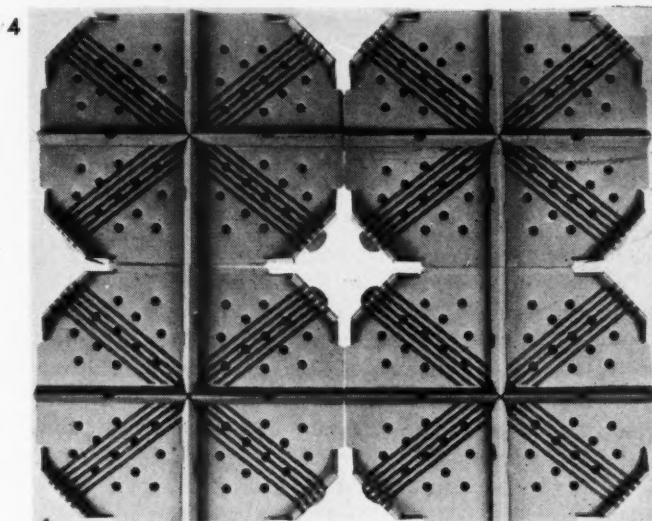
are shipped a few hours after hatching and to calculate their arrival at their destination at a time when there will be someone to receive them.

The chief problem which has always plagued hatcherymen and manufacturers of chick boxes is that of ventilation. The problem does not end with providing air openings. There must also be provision to prevent obstruction of these holes during shipment and it is also desirable that the hatcherymen have some control over the amount of ventilation. Such adaptability of the shipping box is important when shipping live merchandise because climatic conditions are such changeable factors.

The first major step toward development of boxes of the type now used was the early and practically simultaneous independent realization by hatcherymen that a corrugated fibreboard box was the most suitable container from the standpoints of strength, economy, lightness and ease of handling, as well as neatness of appearance.

Once this fact had been established, many box companies gave serious attention to the manufacture of these boxes. However, except for the material of which they were made, there were still no common principles governing their construction. Each box company had its own specifications as to size, shape and means of ventilation. Some boxes were satisfactory, but others were not and by contributing to a high rate of loss among the chickens endangered the reputation of the hatchery industry at a time when its acceptance was still doubtful.

The industry at this time not only faced such unjustified



2—Corrugated corner posts are integral part of box, eliminate need for sticks or staples. Center supports rise through lid, permit extensive stacking without sagging or cutting off air. 3—New stickless, stapless box is ingeniously designed to prevent blocking of air holes at any point. 4—Showing how octagonal shape provides air flue in center when four boxes are put together. 5—Note flue arrangement, crosswise ridge support on lids and corner posts when boxes are tiered. Extension of lids also helps hold boxes apart. Box is said to support 1100 lbs. stacking load. 6—One-piece lid is readily opened from sides or ends to facilitate sexing, culling or inspecting chicks. Note that partitions extend into lid cross members and that tabs lock lid into cross partition when closed. Partitions extend through side as "bumpers."

criticism as that of the Society for Prevention of Cruelty to Animals which objected to the shipping of day-old chicks without food or water but also was confronted with the more serious problem of the inertia of its prospective customer when it came to changing his established practice of hatching chicks on his own farm. The hope for success of the new hatchery industry lay in the fact that the poultryman who bought from a hatchery would be saved considerable time and trouble. However, if he paid for a certain number of chicks, it was apparent that he would expect that they reach him alive. That the chicks were of good stock and were healthy when placed in the box at the hatchery was of little importance to the purchaser if they did not reach him alive. If many chicks in one lot were dead or injured because they reached him in a mashed box or one with insufficient provision for ventilation, the next season he would be likely to order from another hatchery or even to go back to the method of hatching his own. The hatchery would thus suffer at least as much in loss of orders and reputation as the manufacturer of the boxes which were at fault. It was impossible to back up a 100% live delivery guarantee such as most hatcheries offer today until they could obtain a box that would assure that the healthy chickens placed in it at the hatchery would reach the purchaser in a comparable condition.

This was one of the most important problems confronting the International Baby Chick Assn. when it was organized in 1916. At the 1917 convention a committee was appointed to decide upon standards for shipping containers. This was a crucial point in the development of the rapidly expanding hatchery industry. The recommendations made by that committee and adopted by the I.B.C.A. were also accepted by the box manufacturing companies, the express companies and the postal authorities. Therefore, it was to the advantage of every hatchery to use the standardized boxes thus minimizing the possibility that the shipping agencies might refuse

to accept a shipment on the grounds of an unsatisfactory box. Postal authorities had suggested that shipping problems would be greatly simplified if the boxes were standard sizes. The sizes approved were 6 in. by 8 in. for 12 chicks, 9 in. by 11 in. for 25 chicks, 11 in. by 18 in. for 50 chicks, and 22 in. by 18 in. for 100. All boxes were to be 5½ in. high, and the latter two were to be divided into compartments each holding 25 chicks. Of these sizes, that for 100 chicks has become the most widely used by far.

A typical box used today is delivered to the hatchery stamped as a unit on a flat corrugated fibreboard sheet. From each sheet the hatcheryman presses out the one-piece body of a box (the sides of which will be folded up and usually stapled at the corners, although some are fastened by means of interlocking pieces of the box itself), the separate lids which fit down over the box and the compartment separators.

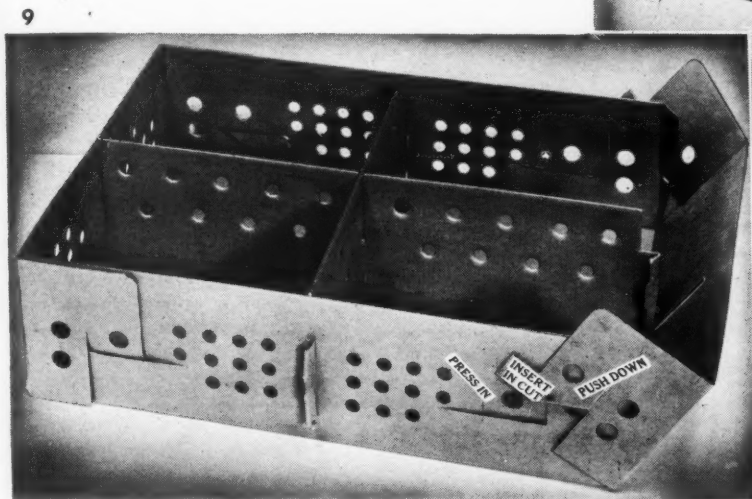
There is another important feature common to all of these shipping packages—the pressed excelsior pad used on the floor of each compartment. This prevents slipping and absorbs droppings. Early shippers tried loose wood shavings, alfalfa and bran, which, however, proved unsatisfactory for such material slid into the corners and piled up there when trucks in which the boxes were carried turned corners.

The primary provision for ventilation in the boxes today is the presence of coin-size, punch-out perforations stamped on the boxes, lids and compartment separators. The chief advantage of this method is that it lends to even the most standardized of boxes the adaptability so important when shipping chicks. The hatcheryman can regulate to some extent the ventilation and temperature in the box to suit shipping arrangements and existing climatic conditions by the number of perforations which he punches out. But the most difficult part of the ventilation problem is to insure that the holes will remain open and proper ventilation thus maintained. It is obvious that in shipping it will often be necessary to



7—Another type of stickless box with cleats and bumpers formed of corrugated on sides and top of lid, may be quickly set up. Grooved corners hold twine tie.

8—This ingenious box, with side bumpers and ventilated top corner cleats, was adopted by one manufacturer in 1944 after lengthy tests. It is said to support a weight of 300 lbs.



9—Box is shipped flat, readily set up according to directions printed and pasted in place.

stack the chick boxes in order to utilize efficiently the space available and the stacks may be pushed up against the sides of the baggage car or express truck or against other stacks of boxes. It is in the method in which provision is made to prevent the blocking of these "windows" that most of the variation in present-day chick boxes occurs.

The simplest of the boxes in use now is essentially a rectangular box with separate lid. The box shown in Fig. 1 is of this general type. Spacing sticks of a light wood, about 1-in. thick, are fastened across the top of the box lid to prevent complete obstruction of air holes when boxes are stacked. The shape and position of these cleats vary. Two long ones may be glued across the lid, often with grooves in them for the wire or twine which will hold the boxes together. A variation of this method is to use 6-in. spacing sticks at the corners, projecting out beyond the box sides. This position of the spacing sticks makes for a stronger box and also permits air to circulate in more directions. Triangular corrugated wedges are sometimes used instead of wooden cleats. These, of course, are relatively simple solutions of the ventilation problem but necessitate the expense of cleats and the time spent in the process of gluing the sticks and letting them dry, or stapling them, lengthens the assembly job.

A later development was the "stickless box," which eliminates the use of extra pieces and therefore can be more quickly assembled. Boxes of this general type depend on their intrinsic shape to keep the air holes open. Some have sides sloping inward. When boxes of this type are stacked, the ventilation holes in the lid may be useless but it will be impossible to obstruct completely those in the sides even if the boxes are stacked close to other merchandise. The chief advantages of a box of this type are that the assembly job is

quicker and involves fewer steps, that there is no extra expense for cleats and that there is no danger that the boxes will be used without provision for maintenance of ventilation. But there are also certain disadvantages. Some users claim that when such boxes are carried in trucks, the boxes are tilted at curves and some chicks slide into the small-corner angle. Pyramid-shaped boxes are said by users to be more difficult to handle, harder to stack and tie together than the rectangular boxes.

A variation of the stickless box is shown in Figs. 3 to 6. The sides of the box are at right angles to the bottom, but the two ends of the lid slope down toward the center where there is a flue to permit stale air to escape.

There are innumerable other variations on both the standard and the stickless box. In 1923 the I.B.C.A. adopted standards for warm weather boxes which were a little larger and had half an inch more headroom than the regular boxes. Similar to the chick boxes, but larger, are those for turkeys.

Most companies manufacturing containers for shipping baby chicks make several sizes—25-chick, 50-chick, 100-chick, and hot-weather boxes—and at least two types, a standard and a stickless box. From many of these companies the hatcheryman is also able to buy staples, stapling machines, floor pads, labels, spacing sticks, and twine—in fact, everything necessary in assembling an attractive, sturdy and well-ventilated box which will assure the reputable hatcheryman that his customer will receive live, healthy chicks.

CREDITS: Boxes—Fig. 1, Anderson Box Co., Indianapolis; Fig. 2, Hinde & Dauch Paper Co., Sandusky, O.; Figs. 3 to 6, Wabash Fibre Box Co., Terre Haute, Inc.; Fig. 7, The National Ideal Co., Toledo, O.; Figs. 8 and 9, Great Southern Box Co., New Orleans.

Anesthetic ether . . . copper-lined cans assure safety and uniformity



1—Top of ether can showing neck, cap and ring. 2—Squibb produces 90% of the anesthetic ether used. So essential is packaging to assure uniformity and safety that the company developed and makes its own copper-lined cans that will hold up to 40 lbs. pressure. Photo shows the four sizes.

For a hundred years, ether has been—as it still is—the most universally useful agent for anesthesia. The manufacture of ether to meet the rigid requirements of uniformity and safety for this purpose involves one of the most highly specialized packaging jobs in the ethical drug field.

The story begins with Dr. Edward Robinson Squibb, a Navy surgeon at the Brooklyn Navy Yard in 1852. Today's successful outcome is the E. R. Squibb and Sons Ether Plant in New Brunswick, N. J., where nearly 90% of this country's standard anesthetic ether is produced and packaged for use in hospitals and clinics all over the land and on the battlefields of the world.

So essential is the method of packaging to assure purity, potency and safety of anesthetic ether, that the company maintains its own can-making facilities for the specially constructed copper-lined containers. In its advertising to the medical profession the company writes: "Squibb Ether is the only ether packaged in copper-lined containers to prevent formation of undesirable toxic substances."

This packaging is the result of a century of constant research in ways of producing and distributing one quality of ether, that for anesthesia.

Anesthetic ether is made from alcohol. In the early days, batches of ether were made in crude stills over open fires, an extremely dangerous process and one in which the quality of the end product was never predictable. Dr. Squibb's contribution in 1852 was the invention of an improved, closed still and a process of distilling ether by steam. This eliminated the constant hazard of fire and explosion in the older process and—much more important—made it possible for the first time to produce pure anesthetic ether of uniform quality.

In 1857, at the proposal of the Chief Medical Purveyor of the Army, Dr. Squibb was induced to establish his own laboratory where he could manufacture reliable ether and drugs for both the Army and Navy as well as civilians. At the outbreak of the Civil War, the new laboratory was in a position to meet the many demands of the Union Armies and a good share, too, found its way into Southern lines. It is said that Lincoln chose to overlook the smuggling of ether to the Confederates.

But the making of pure ether is one thing. Packaging this highly volatile, explosive product and assuring its uniform high quality until it is used is another. Unless properly protected, the purest ether may deteriorate as a result of the

formation of oxidation by-products, such as peroxides and aldehydes. This prohibits its use as an anesthetic. Moreover, the volatile and explosive properties of ether necessitate an absolutely leakproof, unbreakable container that will hold up to 40 lbs. pressure. The ordinary commercial can holds an average of 5 or 6 lbs. pressure.

In Dr. Squibb's day, not too much was known about the causes for the development of traces of peroxides and aldehydes in ether, nor about the control of such formations by proper packaging. The product was put in glass or in cans, whatever could be obtained that was leakproof. Of course, glass containers are not safe, because glass can break and cause fire. Breakage of glass started a fire that completely destroyed Dr. Squibb's first laboratory in Brooklyn. At the present time, I.C.C. regulations prohibit the shipment of ether in glass.

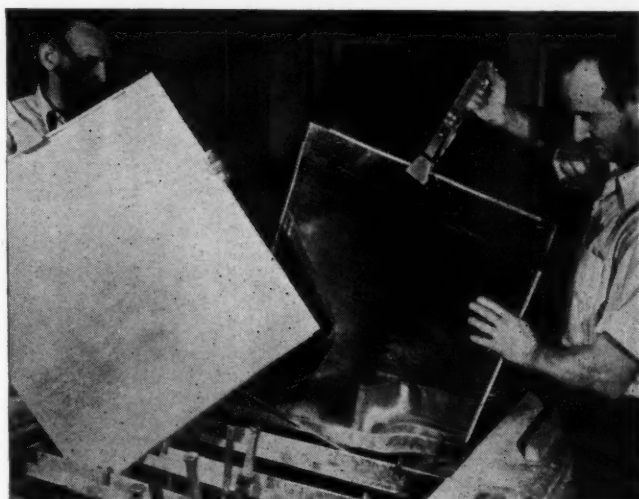
Metal containers of that early day were protective to a degree. During the 1920's, a number of containers of the early Squibb product were discovered in storage in the Brooklyn Navy Yard and out of curiosity were tested. Very little deterioration had occurred and the ether could still have been used as an anesthetic.

However, exhaustive studies of the effect of the container on the stability of ether throw much light on why the ether in those early cans shows little deterioration, whereas similar tin containers used today might result in deterioration through the formation of peroxides within six months.*

Intensive work reveals that all ether suitable for anesthetic purposes will develop peroxides when stored in regular tin, tinplate or glass containers. The peroxides do, however, disappear in time, so that in very old ether they are likely to be absent. Aldehydes may appear while the peroxides are disappearing, but these, too, ultimately vanish. Peroxides that appear in, say, six months after manufacture, however, will remain in the ether one or more years before disappearing. Conditions of storage and mechanical impurities such as dirt or flux also influence the changes. Exposure to light and heat stimulates peroxide formation while storage in the dark or in cold retards it. In general, impure or contaminated ether will develop peroxides less readily than clean ether.

* "The Stability of Anesthetic Ether," F. W. Nitardy and M. W. Tapley, paper before Scientific Section, American Pharmaceutical Assn., Portland meeting, 1928.

3—Two sheets of tinplate are clamped together, electroplated on one side with copper. 4—Tops, bottoms, closures, rings and necks are stamped out on battery of stamping presses like this one. 5—Top discs and necks are soldered together in this soldering machine.



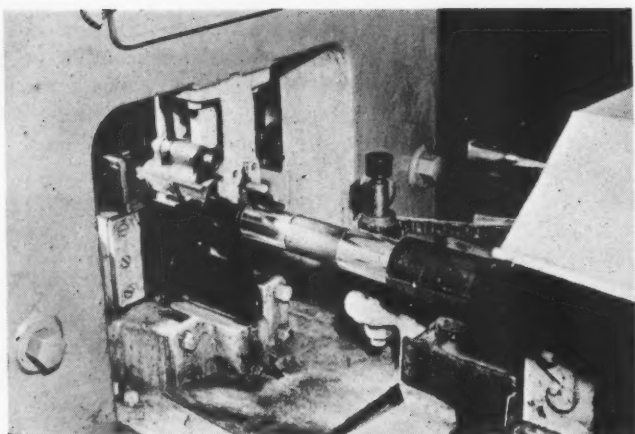
Further research on containers led to a study of the effect of catalysts and anti-catalysts on the reaction responsible for the deterioration of ether and the discovery that the presence of copper prevented peroxide formation.

It was found that ether stored in amber bottles in contact with strips of copper, copper alloys, tarnished, oxidized and green copper, remained peroxide free while the control samples developed peroxides as indicated by the U. S. P. test. More carefully controlled experiments compared ether in contact with copper and copper compounds with ether stored in contact with pure tin and tinplate. The samples containing copper continually tested free from peroxides until the ether was exhausted, more than two years later. The controls containing tinplate showed traces of peroxides on four months' storage, and those containing pure tin, in eight months.

The work was repeated, using tins instead of bottles as test containers. Copper was introduced into the tin containers to expose varying amounts of copper surface. Cans were subjected to temperatures of 54 deg. C. to hasten peroxide development. In every case, the tins containing copper showed a marked inhibiting action on the formation of peroxides and the protective action was greatest in the containers with the largest amount of exposed copper surface.

Complete chemical and physical examination at monthly intervals on hundreds of cans of ether showed conclusively that storage in the presence of copper will keep ether unchanged in every particular over long periods and under temperature variations such as must be expected under ordinary conditions of commerce.

Dr. Squibb died in 1900, but the enterprise he had founded



6

continued, assuming its present title of E. R. Squibb and Sons in 1905. Several years later land was purchased at New Brunswick, N. J., for the establishment of an ether manufacturing plant to replace the older ether plant in Brooklyn.

When this plant was put in operation in 1913, there was no container manufacturer equipped to make the highly specialized container necessary to assure the uniform quality and stability Squibb desired.

That was why the company installed a complete can-making plant to supply its own packaging line and thus to control manufacturing through every step of the process. These two operations—can-making and ether packaging—today occupy two small buildings on the 85 acres of land in New Brunswick where numerous Squibb activities are centered. Production of the copper-lined containers was introduced in 1928.

The process starts with the clamping together of sheets of tinplate and electroplating them on one side with copper to form the copper lining. The electroplating is done in the plant. After the sheets are removed from their electroplating bath, they are washed and dried. Then the tinplate sheets with copper on one side go to a battery of cutting and stamping machines, where the sheets are cut to proper sizes for the can bodies and into discs for tops and bottoms.

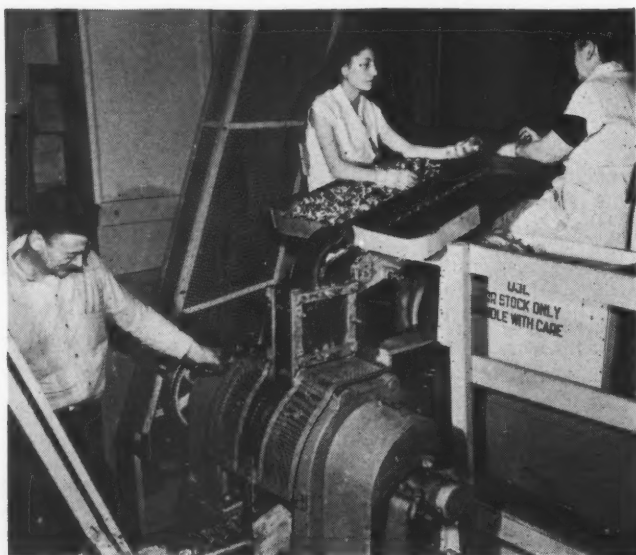
Other stamping presses form the closures, rings and necks of the containers. Top discs and neck rings go to a soldering machine where they are fastened together. In another part of the building the cut, flat sheets for the can bodies are fed automatically into the can body-maker and pass on to the machine which solders the side seams.

On the wall above the body maker is a diagram showing in minute detail the construction of the soldered seams—doubly overlapped according to plan worked out by Squibb engineers so that there can be no possibility for leaks and so that the cans will have the additional strength to hold 40 lbs. or more pressure. Such pressure is necessary because ether reaches its boiling point at 95 deg. F. and at that point turns from liquid to a gas. On cooling, it reliquifies, but for protection in commerce, should the product be subjected to high summer or tropical temperatures, provision must be made for well above the maximum strength to assure safety of the cans.

After the can cylinder is formed, tops and bottoms are placed by operators in a guide which leads them to a header where they are forced onto the cans. As the cans leave the line each one is tested under water by forced air. Leaks are revealed by air bubbles passing out of the container into the water.

After thorough washing and drying in a rotary machine, the cans are ready for delivery to the packaging line in the adjacent building. They move directly from the dryer by a power and gravity conveyor system at just the right speed for handling on the packaging line in the other building.

The can-making production is faster than the flow of containers needed on the packaging line. Therefore, a portion of the cans is constantly taken from the dryer and stored empty, while the rest move on the conveyor to the packaging line.



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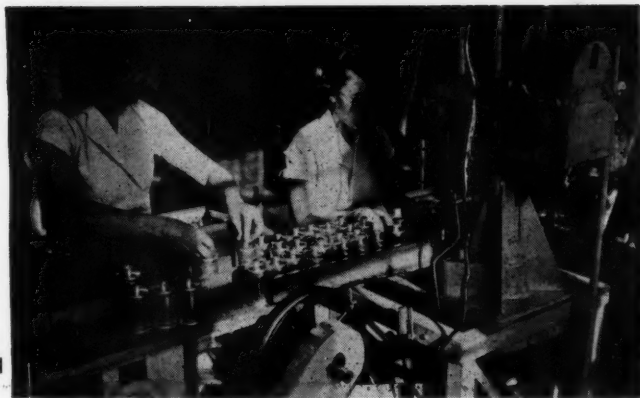


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6—Copper-lined sheets are formed into can bodies. Soldered seams are doubly overlapped according to plan worked out by Squibb engineers to give required strength and to prevent leaks. 7—Tops and bottoms are placed by operators in a guide which leads them to a header where they are forced on the can bodies. 8—Cans are tested for leaks under water by forced air. 9—After thorough washing and drying cans move by conveyor to the packaging line in another building.



10



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12



13

10—Cans are fed from conveyor onto 10-head filler. Filler heads go almost to bottom of containers during filling to aid in expelling air from container. 11—Caps are placed by operators and spun hermetically tight by a reaming tool. 12—Each can is heated above 95 deg. F. or high enough for the liquid to become gaseous; then submerged under water in an illuminated tank, where operators scrutinize each can for bubbles that indicate leakers. 13—After drying, cans pass through automatic labeler. 14—Automatic cartoner sets up carton and loads. At same time a cork is hopper-fed into each package. 15—Samples of every type of ether package since plant started are kept in plant office.

14



This stored surplus is a hedge against possible breakdown in can manufacture—a foresighted precaution in these times when capacity production is needed for military requirements.

By conveyor the cans ready for filling enter the building housing the ether filling line through a slot in the wall. They move by rotary conveyor to a specially built ten-head liquid filler. The filler is fed by pipe line from the ether storage tanks in still another building. The filler heads are extremely deep and go almost to the bottom of the containers when they are being filled. This is said to aid in expelling air from the container as it is filled and thus to reduce further the chance for oxygen by-product formations in the ether.

Immediately the containers are filled, caps are placed on by hand. This is an operation the company hopes some day to mechanize but to date it has found no satisfactory capper to handle the very soft metal closures used. The closures are made soft and thin so the anesthetist may puncture them with a needle just before application and thus assure the purity of the ether up to the moment of administration.

After the caps are spun her- (Continued on page 150)

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News in ink

The cardboard carton shown at the top of the illustration for Sanford's Indelible Ink Kit has been replaced by the fibre can shown below. This change in packaging has been made for several obvious reasons.

First, the company claims that the carton did not make nearly a sturdy enough container. It never lasted as long as the product. On the other hand, the fibre can with metal ends cannot be smashed even when packed into a soldier's duffle bag. Another advantage is that because of the shape and design the new package is much more compact and takes up less space than the old.

Because of the nature of the old carton it was necessary to include inside the package a small wooden disc over which the user stretched the fabric to be marked. In the new package, the metal top itself acts in place of the disc making the kit more compact with one item less.

In the new kit the three pieces which make up the set—ink, pen point and holder—are held firmly in a cutout metal platform whereas formerly the pieces set into a die-cut paperboard platform. The metal, naturally, holds the products more firmly and is not nearly so apt to tear as the paperboard.

The color scheme of the new package is another improvement. Whereas the old carton was yellow and navy-blue the new one has been re-styled and the color is mainly maroon with a circle of yellow. The name, "Marking Set," also, gives a more accurate picture of the product than "Indelible Ink."

CREDITS: Fibre cans, American Can Co., New York. Labels, Schuman Label Co.

Design Histories



Pharmaceutical design

For many years the Crookes Laboratories, Inc., have been specializing in a line of colloidal preparations which were sold under the general brand name "Collosol." It was found, however, that when doctors wanted to prescribe these particular products they simply specified colloidal this or that and the business went to competitors.

Some years back, after an analysis of the situation, it was decided to throw overboard the brand name Collosol and transform each product into a distinct specialty with a distinctive name. It was decided, also, to maintain family relationship among the products by employing a more or less standardized label form on all but making the name different.

Enzo-Cal, a greaseless, anti-pruritic cream, is one of the first of the completely redesigned packages to appear on the market. The label is quite simple, lightly gummed to the tube so that pharmacists can remove it when the ointment is needed to fill a prescription. The company wanted to use lithographed tubes but, since Enzo-Cal is promoted solely to the medical profession, druggists prefer to substitute their own labels when filling prescriptions.

The success of this one package has been so great that the company intends to re-design the entire family as soon as packaging difficulties can be overcome. The aim will be to incorporate on each package some small device or seal to identify the product as made by Crookes Laboratories.

CREDITS: Designer, Egmont Arens, New York City. Cartons, Lord Baltimore Press, Baltimore, Md.

A new dispenser

An entirely new attempt at making a dispensing carton has been evolved by the Bauer Mfg. Co. for its Burlite cleaner. The product is a free-flowing powder which when added to water—a heaping tablespoonful to make a certain stated amount of mixture—makes an all-around household cleaner.

In order to avoid measuring, the company has included, as a part of the carton, a funnel-like arrangement which is supposed to dispense the right amount each time. This dispenser can be seen in the lower illustration. It is a simple piece of paperboard which is fastened against two sides of the inside of box with a scored portion at the top bent down to form the funnel. When the box is closed this funnel is so placed that the powder can flow into it at the top.

On the exterior of the carton is a red seal which must be punched open. Along the one side are line-drawn illustrations showing how the dispenser works. After punching a hole in the seal, the package is held upright with a finger covering the opening. Then, while still holding it shut, the box is turned bottom up to fill the dispenser. After the dispenser is filled the box is held upright over the water, the finger released and the powder pours out in the right amount needed. The company claims that tests have shown that dispensing efficiency is increased as the first of the material from the top of the box is used.

The disadvantage of this new feature at the present time, however, is that the additional board needed cannot be allotted for this purpose, making the package one with postwar appeal only.

CREDIT: Carton, A. L. Garber Co., Ashland, Ohio.



Design Histories

All-plastic rouge case

Dainty as a chatelaine watch case is this new plastic case for rouge, just slightly more than $1\frac{3}{4}$ in. in diameter and only about $\frac{1}{2}$ -in. thick. The case is injection molded in two pieces.

Unusual feature is the patented hinge, which requires no pin. The plastic cover is sprung into the base, which entirely eliminates the use of metal. The case is opened by means of a slotting in the base lip big enough so that the lid may be raised easily away from the base. Just enough leverage is allowed between the inside ring of the cover and the collar of the base so that the top snaps securely over the base when the container is closed. The material is cellulose acetate.

One of the first to adopt this container in the Eastern area is Prince Matchabelli for a rouge container in its recently added line of make-up to the Duchess of York family. Simplicity is the keynote of the design—pure white plastic with no other decorative feature to the mold than extensions for lips and hinge of the circular case.

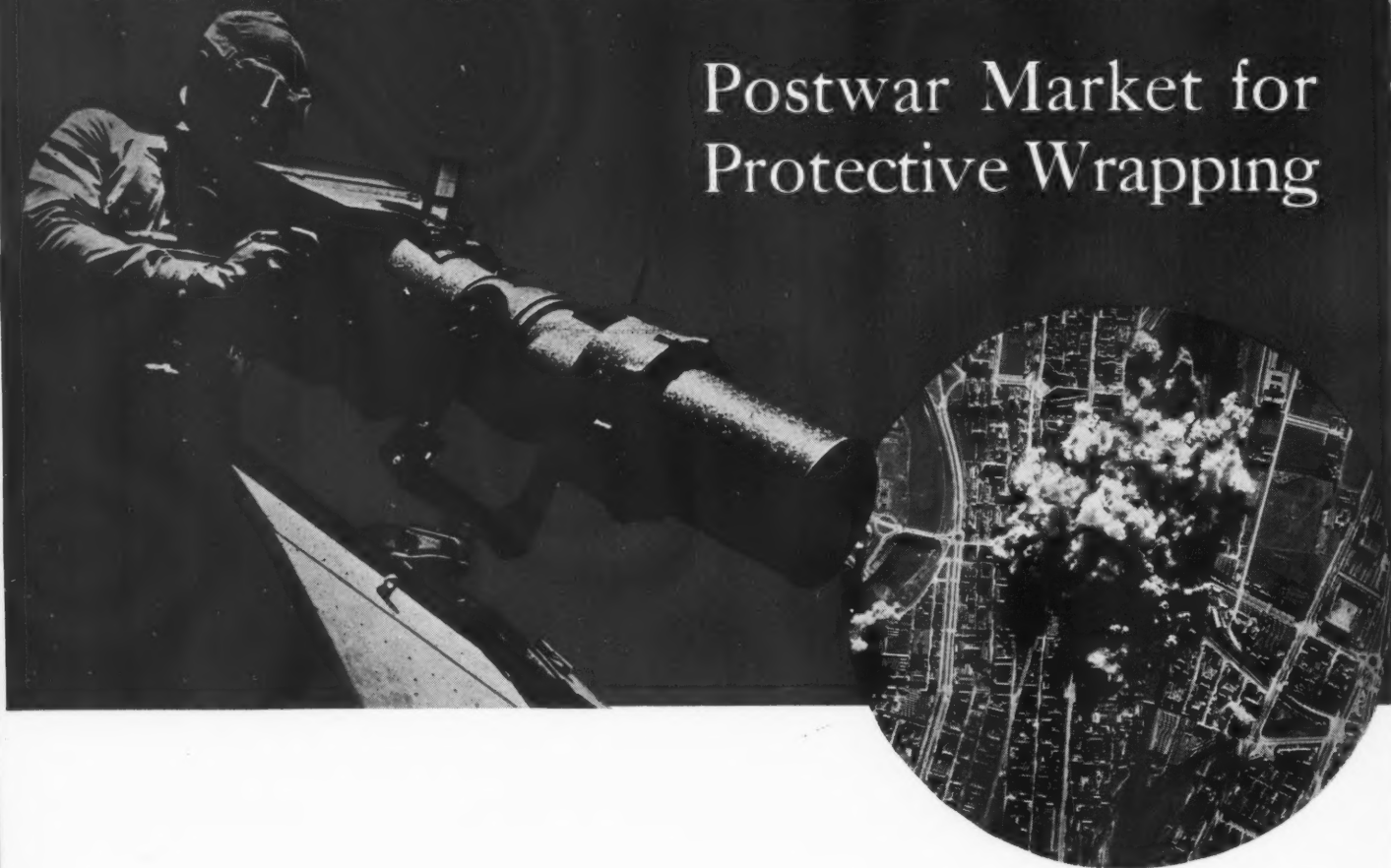
Trade identity is achieved by roll-leaf stamping of the Matchabelli crown in gold on the lid. On the bottom is affixed a tiny circular blue paper label on which is printed the name of the rouge shade and the words, "Prince Matchabelli, Inc., New York." The container is hand buffed to give it a rich, high gloss. Cases of this type should find wide usage in cosmetic packaging in the better-priced lines and may be made of other materials than acetate, when the supply situation permits.

CREDITS: Molded by Bernard Edwards Co., Chicago. Design of flat undecorated cover, Duff Gordon, New York.



Aircraft Cameras...

Postwar Market for Protective Wrapping



A question uppermost in the minds of suppliers of approved moisture-vaporproof barriers required for Method I and II packs for military shipment is: "What markets will be found for such materials after the war?"

Many suppliers have expanded considerably in this direction. Some sources estimate conservatively, however, that there will be a postwar civilian market for about only 10 to 12% of current wartime output in the field of preservation packaging.

Such materials and methods, although excellent, are said by many shippers to be too expensive for ordinary commercial purposes. Therefore it is interesting to point out examples of specialized industries which may be definite prospects for such supplies after the war.

One such company, because of the nature of its prewar business and expected development after the war, is the Fairchild Camera & Instrument Corp., manufacturers of the bulk of aircraft photographic equipment for the Army and Navy.

Before the war the average price of a large automatic aerial camera was about \$4000. Today, due to the increased production required by the Army and Navy, the average price has been brought down to about \$1500 per camera. The fact that the cameras can be made on a larger production basis at so much less cost per camera, the company believes presupposes a wider sale of aerial cameras to a market that would not have purchased cameras at a \$4000 price. The requirements for aerial photography in all parts of the world for engineering survey work, for rebuilding the devastated areas, extension of pipe lines, communications, etc., will also add to the demand for aerial photography.

The company also has in mind such dream ideas as amateur aerial cameras for private planes, so that John Jones may take

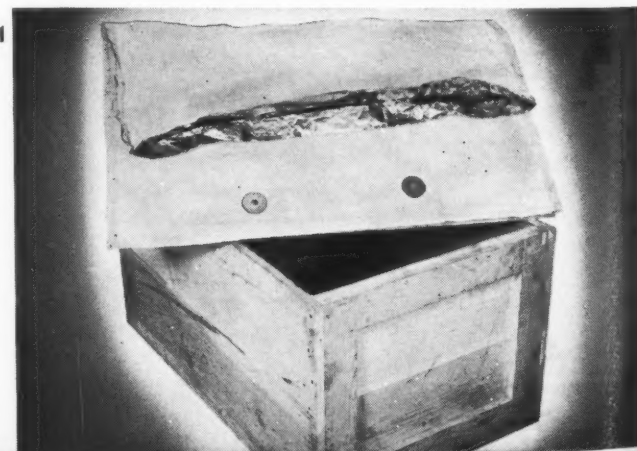
his own pictures when on a pleasure trip in his own plane.

All this anticipated business indicates a need for careful preservation packaging of aerial cameras, parts, aviation instruments, sound equipment, electronic equipment, x-ray cameras, etc., all of which products Fairchild makes.

Due to the high initial cost of such items, packaging costs are negligible in comparison with the need to protect the instruments from corrosion, damage from handlings and all the other hazards they encounter from factory to user. The fact that in normal times 50% of Fairchild's business is export also make preservation packing more imperative.

With wider usage in all parts of the world, the company expects to prepack increased quantities of parts for dealers in many countries. Such parts, of necessity, will have to be packaged to withstand longer periods of distribution and longer storage life, demanding greater protection.

1—Weatherproof bag and crate replaces former trunk.



According to Sidney Ragonnet, Fairchild's traffic manager, "There will be a definite and continued trend in the postwar period for all camera manufacturers to preserve parts and complete instruments against corrosion. Whether single parts or entire instruments are involved, still they will be correctly packed by new wartime methods for both storage and shipping purposes.

"No manufacturer can afford to take chances of having his equipment and incidentally his reputation ruined when pre-

ventative measures make any such damage completely unnecessary," he said.

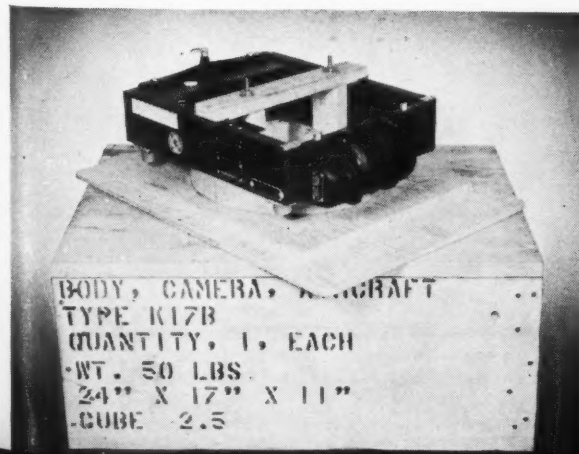
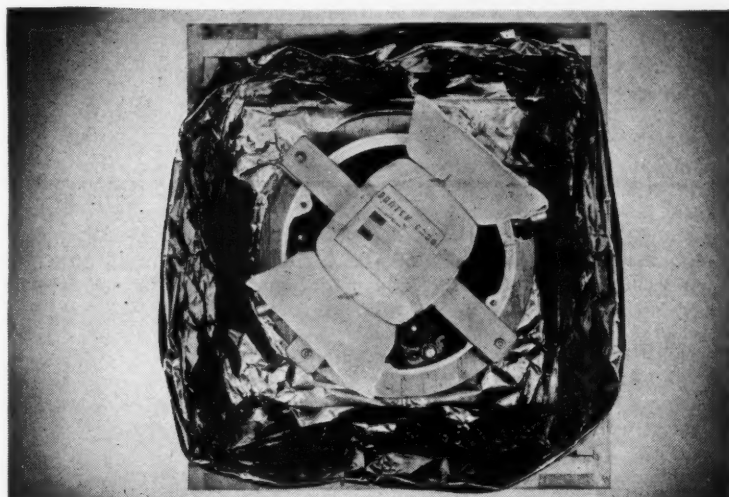
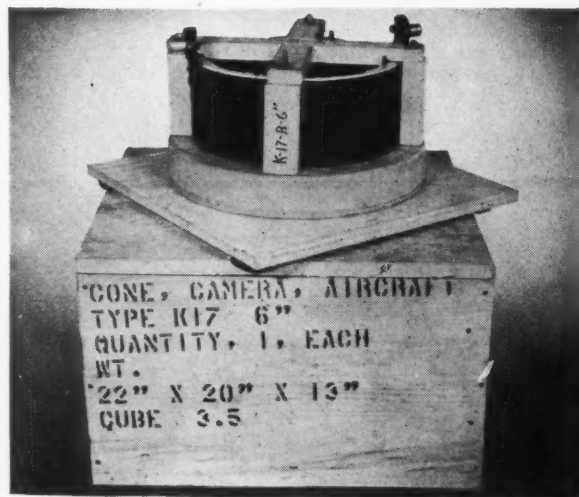
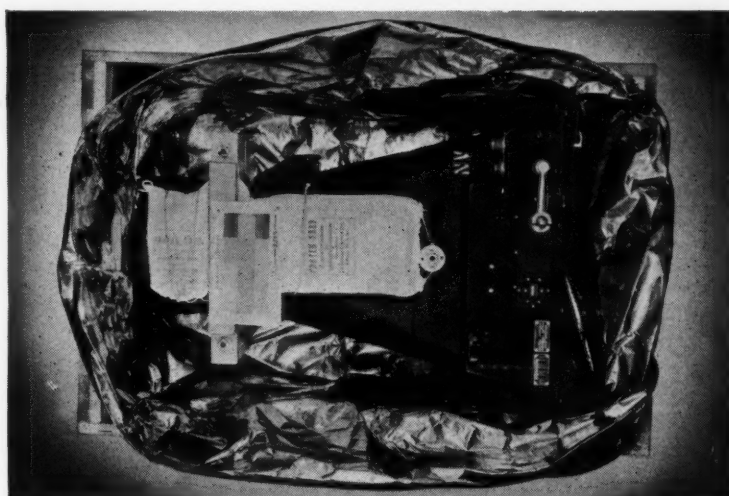
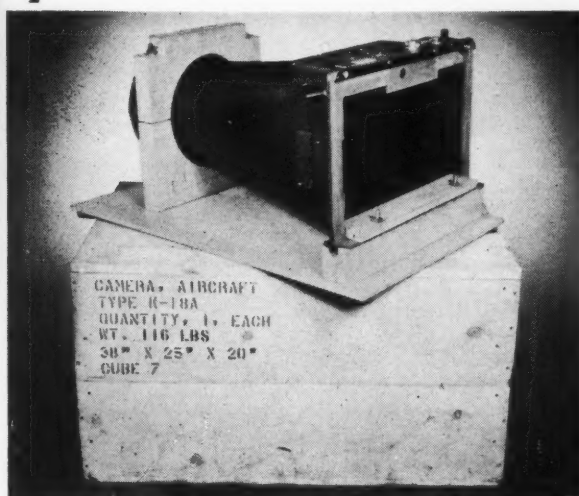
"The war has brought about such a complete revolution in packing methods that accepted prewar ideas on the subject are about as outmoded as the Model T Ford."

To fight the corrosion problem in the camera field, the Fairchild people, pioneer exponents of elaborate preservation-packing, were the first to put a solid program into use.

Today they are the coordinators for the entire photographic

2—Left below, top to bottom, are two types of aerial camera lens cones and the body assembly of an aircraft camera, mounted with toxic-treated plywood panels and blocks. At right of each is the same part in laminated foil and kraft bag with silica gel in accordance with Army-Navy specification ANP-13.

2





3—Fairchild operator sorting small camera parts for the proper-sized box. Chart of varied size boxes in back. 4—Small part being tank dipped.



group through the Army and Navy. Phases of the basic Fairchild program are being emulated in the entire industry according to particular requirements of each manufacturer.

When planning the program, Fairchild consulted with Army and Navy personnel and the Aeronautical Chamber of Commerce. Every spare part that goes into big, intricate aircraft cameras was discussed in detail; unit quantities were decided on that were most suitable to armed forces requirements, in so far as single packaging units were concerned; detailed preservation-packing procedure for each unit was drawn up. The result was a standard method for packing every camera part, as well as complete instruments. This method is covered by Army Specification ANP-13, now a part

of all war contracts. It will form the nucleus for postwar shipments of similar nature on a commercial basis.

At present a practically infallible way of getting aircraft cameras to war photographers is in full force. A composite of aluminum, magnesium, steel and brass parts, these units are bulky though intricately constructed, with precision moving parts machined to close tolerances. Small parts are now put through a varied tank-dipping and waxing process, whereas large units are packed snugly in recently developed barriers with dehydrating agents. This procedure, complex and many-faceted, has completely routed corrosion, with no failures in shipment reported since adopted.

This happy situation is in marked contrast to that which prevailed heretofore. Packed in felt-lined trunks, aerial cameras were shipped to specialized depots or directly overseas in accordance with prewar commercial practice. Entirely sufficient to insure the instruments from damage due to possible rough handling, it was inadequate to eliminate the equally serious sort of damage due to corrosion. Often the equipment laid around in storage for months before there were ships to take it overseas. When it finally arrived at its destination, it was sometimes unserviceable for immediate use.

The new plan, in shipping complete cameras, entirely eliminates the carrying case or trunk. Instead the camera is now protected from shock by means of specially designed wooden shipping boxes that contain interior toxic-treated plywood panels and sturdy blocks, clamped securely by means of bolts running through the bottom of the plywood panel. Felt cushioning is placed on sections of the blocks that come into contact with camera surfaces.

When the camera is clamped thus tightly, the specially designed laminated moistureproof barrier is installed between the plywood panel and the supporting blocks, with gasket both inside and outside the barrier to accommodate mounting bolts. This moisture barrier is arranged to float the complete camera within it, to eliminate any possible rupture that might be caused by the instrument coming into contact with the barrier. The barrier touches only smoothed-out blocks.

Next the required amount of silica gel up to a maximum of 10 lbs. is tied onto the camera to serve as a dehydrating agent. A humidity moisture indicator card is inserted on the upper portion of the inner unit, revealing to the men who finally

unwrap the shipment in domestic depots or in far-off war zones just how much moisture has been absorbed. The barrier is then heat-sealed.

The indicator card is an important part of the shipment. Assuming the camera is sent to a storage depot to remain there any length of time, a depot inspector periodically checks the date indicated on the shipping case and, should this date be more than six months after original shipment, he must open it for inspection. If upon examination of the indicator card, he finds the reading shows "unsafe," he replaces the silica gel.

This check-off system allows the equipment to be stored indefinitely and still be protected against all the atmospheric conditions that cause corrosion. It also cuts down labor and expense at Army depots. Under the old system of shipping cameras in trunks these trunks would be placed in corrugated cartons and sent to storage depots. When overseas orders were received at the depots, it was necessary to wrap the trunk with waterproof paper and seal it with wax, and then re-pack the camera in a wooden export case. Not only was this arduous, but it was no sure guarantee against corrosion.

However expensive this method may be for the usual commercial shipment in the postwar period, it's worth its cost, as has been consistently proved throughout the war. Mr. Ragonnet of Fairchild can cite instances over and beyond the hundreds of shipments that have safely reached destination overseas. There have been cases wherein material packed in this way is returned unused, for some reason or another, after a period of over one year. Even though it was kicked around and subjected to every climate, still the instruments were found to be in perfect condition, the same as when they left the plant. Another example has been in parts that have been put in the Fairchild warehouse after final inspection. Parts that were entered into stock before the inception of the preservation program were later found corroded and unserviceable. But similar parts that were given the preservation treatment were found to be glistening and new after an identical period of time.

The whole thing boils down to the economic principle that preservation-packing averts re-working of equipment that in the long run is more expensive and annoying than adequate precautions taken from the beginning.

Small camera parts

Preservation-packing of aircraft camera parts follows current standard procedure throughout all war industries fairly uniformly. It involves two separate practices:

The first method has to do with small self-contained units, typical of which are rigid gear and cam assemblies, screws, nuts, bolts, washers, and the like. In most cases the cost of packing is a great deal more than the actual cost of the parts themselves.

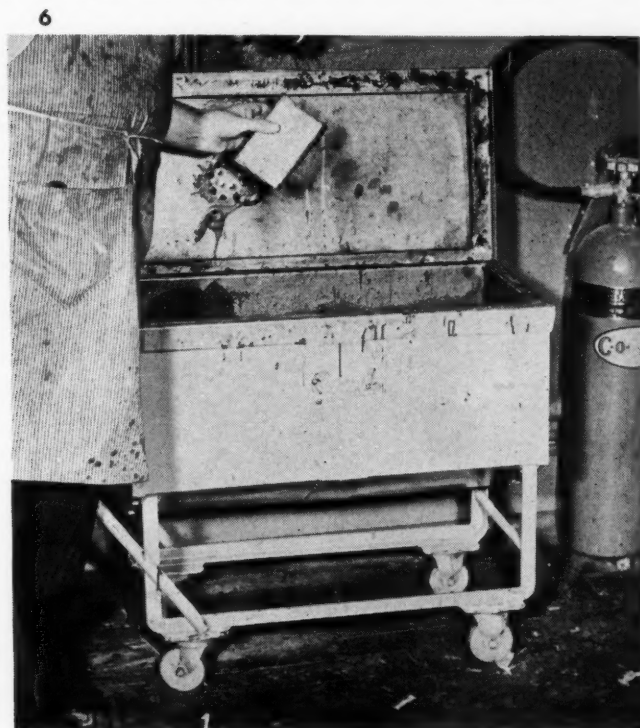
For these particular parts, a three-tank dip system is used. The first tank contains a degreasing compound or cleaning agent. The unit is then washed in a second cleaning compound, in tank two, to remove fingerprints and to serve as a light-preserved. Immediately after this second dipping the part is made bone-dry by means of a regulated compressed-air hose. Then, in tank three, the part is dipped in AN-C-52 preservative compound.

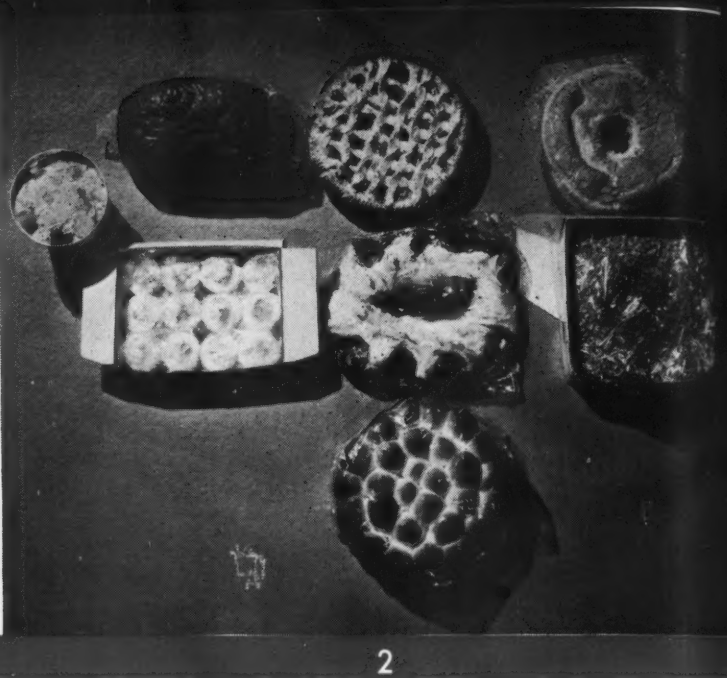
After the three dippings, the part is dried by natural atmospheric conditions for about 20 minutes, a thin film of preservative appearing and remaining on the unit. This coating is the part's most important protection against corrosion.

Then packaging begins. Additional preservation precautions are taken. Assembled parts are inserted in grease-proof foil bags, in themselves rust-inhibitors. Each of these envelopes has previously been labeled by the printing department as to description, part number, quantity, etc. After the specified number of units is inserted, the envelopes are heat-sealed. Fifteen thousand of these foil bags are printed at Fairchild every day.

The final container is marked with an explicit caution: "Remove preservative compound before use. Relubricate in accordance with instructions (*Continued on page 148*)"

5—Part is heat-sealed in enveloped. 6—Wax-dipped part, sealed in envelope, is placed in box and dipped.





New wrinkles . . . in home packaging of foods for freezing

Home freezing of frozen foods is a subject of continuing importance to the packaging field because of the new market it is opening up for virtually all types of flexible packaging materials.

The exact potentialities of this market will depend upon the likes and dislikes of the housewife and the ingenuity which she characteristically shows in finding new foods to freeze and new and easier ways of packaging and freezing them. In this case the consumer not only is the final judge of the package but her kitchen is in large part the research and development laboratory carefully watched by the alert packaging material manufacturer.

Straight from the kitchen are the pictures on these pages, prepared by Miss Adelaide Fellows, home service adviser of the General Electric Consumers Institute, to show some of the latest wrinkles in home freezing.

Only a housewife could have thought of so simple an idea as breaking eggs in an ordinary refrigerator tray, freezing them, shaking out the "egg" cubes and wrapping them individually in moistureproof cellophane for frozen storage in a paperboard setup carton (Fig. 1). Whole eggs, separate whites or separate yolks may thus be frozen. Alternatively, small paper cups or nut cases may be used in freezing and then wrapped and sealed.

The housewife also has discovered that all types of home-cooked foods—bread, pies, cakes, chicken a la king, spaghetti, meat balls and beef stew—may be successfully frozen if properly packaged (Fig. 2). Baked goods are wrapped in moistureproof cellophane and heat-sealed; foods such as cakes may then be placed in cartons for added protection during storage. Chicken a la king, beef stew, corned beef hash, baked beans and the like are packaged in heavily waxed containers the same as is used for fruits.

(Page 106)

5



6





3

Experience has shown that the cup-shaped container with snap-in lid (Fig. 3) is the most practical for fruits, Miss Fellows says. The container should be heavily waxed. With the snap-in lid, no heat-seal is required.

Consumers will find it easier to pack vegetables in the bag-in-box type of container with the frame and white plastic funnel shown in Fig. 4. The simple metal frame holds both box and bag erect and open; the funnel rests atop the frame and permits rapid filling with no danger of spilling on the outside of the package.

Steaks or chops are trimmed for table use, then packed in a shallow, waxed carton lined with moistureproof cellophane (Fig. 5) and the carton overwrapped with the same material and heat-sealed. Two sheets of cellophane are placed between the layers of meat to prevent them from freezing together.

Whole roasting chickens (Fig. 6) may be wrapped in moistureproof paper—cellophane, parchment or waxed paper—covered with stockinette to hold the wrap firm and press out excess air, tied securely and labeled with contents, weight and date. Cut-up chicken is simply placed in a shallow waxed carton (Fig. 7), with the giblets separately wrapped, and the carton overwrapped with cellophane or glassine and heat-



4

sealed. A rectangular top-opening carton has been found most satisfactory for all cut up meats and poultry.

Fish are similarly packaged, but each whole fish or piece should be individually wrapped in cellophane before being placed in the carton (Fig. 8). Oysters, scallops and clams, however, are better off when packed in the cup-shaped container with a snap-in lid, like the ones used for fruits. These same containers or the bag-in-box carton used for vegetables has proved most satisfactory for shrimp, lobster and crab-meat.

Other tips from Miss Fellows: The housewife likes attractive packages that she will be proud to show to others. She likes small packages, holding just enough for a single family serving. She likes the cup-shaped container because it nests and takes up little room in the supply cupboard, but at the same time she realizes that any round container wastes precious space in her freezer. She hates any container that will leak, creating a mess in her freezer. She is rapidly learning the necessity for packaging materials that will protect against both moisture and vapor losses, for she has found that foods stored without such protection dry out, become rancid, take on foreign flavors and have a tendency to toughen when cooked despite all other precautions.



7



8



1—Family of X-Acto packages, showing wood tool-chest boxes, set-up box, method of wrapping extra blades like razor blades, sleeve cartons replacing set-up boxes. Interior die-cut piece keeps knives secure.

Hobby tools . . . merchandised through packaging

An advertising man in a surgical instrument house was a photographic fiend. He needed a retouching knife. He told his president, Sundel Doniger, about it and the president made a knife for him.

It worked so well, the advertising man believed other amateur photographers would like it. Said he to the president, "We could sell it in every hobby store in the country."

That was how X-Acto Crescent Products Co., New York City, started out in the hobby market for cutting tools. In five years, two products—a photo retouching knife and a silk screen stencil cutting tool—have grown into a fully packaged line sold for more than 20 different uses.

The market is in hobby stores and artists' supply shops. The first retouching knife was sold unpackaged from a carded display unit.

From the very start, the company was wide awake to the fundamentals of good merchandising. Promotion of brand identity, they reasoned, was one of the essentials and one of the most important factors was good packaging.

First step was the establishment of a trademark. This was

the brain child of Mr. Doniger—a criss-crossed little figure formed with a head above two crossed knives—known familiarly in some 5000 stores as Mr. X-Acto. This figure now appears on all the packages and company displays.

The first package was a set-up box with die-cut platform to hold the knife. Later when other knives and a variety of blades were introduced, they were packaged in sets. Set-up boxes were still used because they could be made with interesting suede coverings and the die-cut platforms offered good protection to the blades—an essential when packaging sharp-edged instruments.

Later, the value of a re-use box for the tools was recognized and in planning this, a blond wood box, similar to a fine tool chest, was selected. Today, a box of this type is specially made for the company's deluxe set of carving knives used by ship and airplane model makers. This box has a hinged lid which fastens with a metal hook. Inside are three styles of knives. An assortment of blades is stored in the lid by means of a specially constructed metal clamp to hold them in place. Directions for using the clamp are printed inside the cover.

The X-Acto trademark is a decalcomania on top of the box. For display purposes, the trademark decal is placed inside the lid so that it may be seen when the lid is open. Another smaller wood box is also designed for a single tool. In this blades are also attached by screws to the lid.

When the wartime paper shortage loomed, the company had difficulty getting a sufficient quantity of set-up boxes and had to design folding cartons to replace previous paper set-up boxes. Some of these are two-piece sleeve types, while others are similar to toothbrush cartons. The most difficult problem in this redesign was to keep the knives secure in the cartons so that they would not slide around and cut through the carton ends. This was solved by the use of a small die-cut piece of paperboard glued in the form of a rectangle. The knife blade slips through this, which holds it securely inside the carton (see illustration).

The company is undecided whether it will return to set-up boxes after the war on some items. The folding cartons have worked out very satisfactorily and have another big advantage. They take so little warehouse space because they can be stored flat.

Packaging is all by hand, so that to date no machinery problem has been involved. The work is all done in the company's New York plant where a corps of young women with nimble fingers assemble the knives and place them in the boxes. Spare blades are oil-sprayed for protection against corrosion and wrapped in glassine before being placed in die-cut folders like razor blades.

Because point-of-sale selling is the essence of X-Acto merchandising, the entire X-Acto line of packages has been designed with the idea of display appeal and for placement in counter merchandisers.

Easel display units are made of wood grooved to hold perhaps an assortment of the packages, or one deluxe set in its wooden chest, or for the single carving tool in wood box. The focal point for all of these is a paperboard, die-cut figure of Mr. X-Acto, silk screened in red, blue and silver. Another variation of this display holds in addition to the packages, booklets prepared by X-Acto and written by experts on how to build models, etc.

For X-Acto Jr., a 25-cent knife for boy airplane modelers, a printed shipping carton opens up into a counter dispensing unit holding three dozen knives in cartons.

A display and stock cabinet, which may be seen on the counters of some 5000 stores, or nearly every one in the country handling hobby tools, is the company's most familiar unit, but is now out of production due to the materials situation. It is made of light primavera and walnut, with a transparent acetate front. Inside are displays of the complete line of hobby knives with the exception of the deluxe boxed combinations. On top is the criss-crossed trademark. Although this unit has been outstandingly successful, the company is now designing a new postwar one to take its place with a molded acrylic cover.

A new series of displays introduced recently incorporate the picture-story technique of selling the blades. One of these, for example, shows a boy carving the parts of a model airplane. In back of him is an (Continued on page 146)

2—Easel display unit of wood for package display. Identifying company trademark—die-cut silk screened figure of Mr. X-Acto, fits into groove in back. 3—Printed shipping carton opens into counter unit for X-Acto Jr., a 25-cent knife for boy airplane modelers. 4—Picture-story technique which was recently adopted for a new display series.



PACKAGING PAGEANT



1 Under the trade name of "Ellen Kaye" the L & K Laboratories of St. Paul, Minn., are now merchandising a line of beauty preparations which heretofore have been sold to cosmetic houses under private labels. The line will be sold exclusively to beauty shop operators. An attractive green and rust label used for all of the preparations identifies the various products as a family. At the present time the "Ellen Kaye" family consists of seven products which will be added to from time to time as needed. Bottles and closures, Hazel-Atlas Glass Co., Wheeling, W. Va. Closures, W. Braun Co., Chicago. Cartons, Kaplan Paper Box Co. Labels, Jensen Printing Co., Minneapolis, Minn.

2 La Cross' new "Pink Magic" nail polish comes in the easy-to-hold bevelled bottle which this company has advertised so widely for all its polishes, only this color is banded in pale gray with a white rabbit popping out of a magician's top hat. Following the usual policy of the company, the outer folding carton is the stock one used for the entire line of nail polishes. Cartons, J. Makowsky Corp., New York.

3 Gourielli gift baskets of methyl methacrylate hold various cosmetic preparations for both men and women and are made up by the New York Salon for sale throughout the country. Many-colored ribbons tie the bottles and boxes to the graceful handle. The pale blue ceramic containers are set off by the transparency of the plastic. Baskets sell from \$5.00 up and can be made up to the individual tastes of the customer. Basket, Leo Prager, New York. Methyl methacrylate, E. I. du Pont de Nemours & Co., Inc., Wilmington, Del.

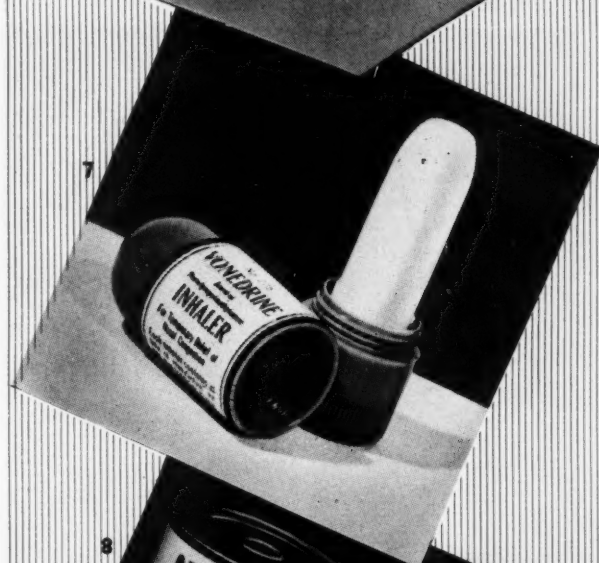
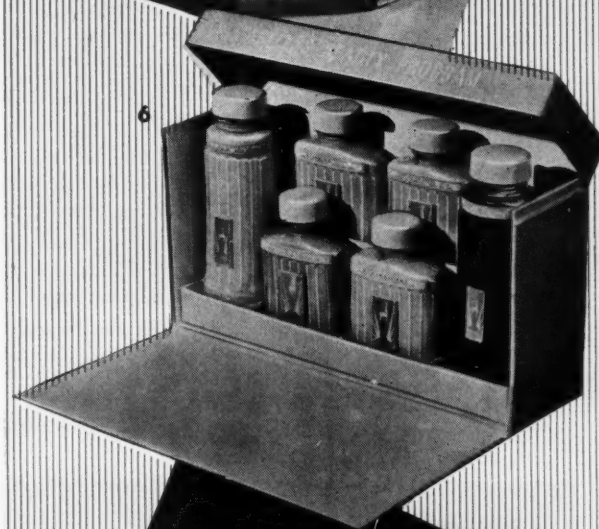
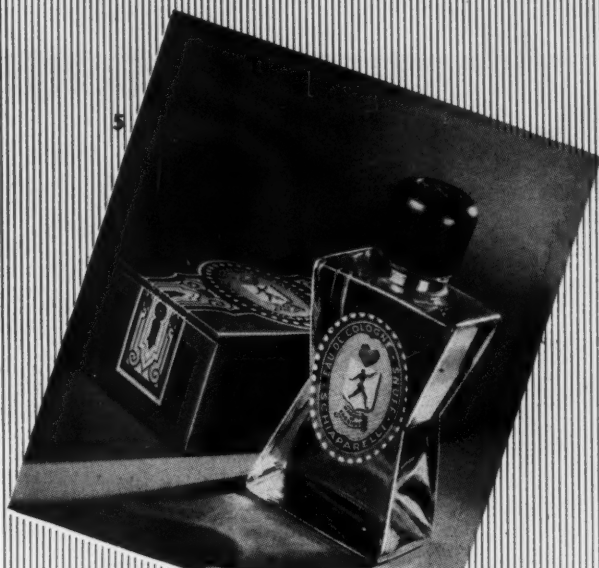
4 Homix Products, Inc., enters the ice cream mix field with its new product "Tis." The powder is packed in a simplex moistureproof bag heat sealed at both ends and then inserted into the folding carton shown. Four colors are used on the outer package with red and blue predominating. The back and the front of the package are exactly the same making stacking a simple problem for the retailer and directions and variations are given on the side panels. Design, Lucian Bernhard, New York City. Cartons, Federal Carton Corp., New York. Inks, Sinclair & Valentine, New York. Inner bag, C. Benj. Betner Co., Devon, Pa.

5 An easy-to-hold bottle with a chunky brown wooden closure was chosen to hold Snuff Eau De Cologne the latest men's cosmetic by Schiaparelli. Like its companion product, Snuff perfume, it is packaged in a hinge-lid box made to resemble a cigar box. The seal which keeps the container closed and prevents tampering is a reproduction of what might be an enlarged cigar band.

6 Soft, feminine pink and blue is the color combination chosen by Dermetics for its new Ageless Beauty Kit. The drop front set-up box was selected to grace the dressing table and to last as long as the cosmetics it contains. A rich, dull-finish coated stock covers the box while glossy finish is used for the lining. Dermetics Grecian fluted bottles stand upright, each in its own partition, and the drop front enhances its display value. Design of box, Nina Hagen and F. G. Kuttner, New York City. Box, Union Paper Box Mfg. Co., N. Seattle, Wash.

7 Wm. S. Merrell Co. has a new all-plastic inhalator for "Vonedrine," its nasal inhalant. The inhalator is molded of urea in three pieces. The inside section which holds the inhalant is white. The contrasting colored top screws into the base similar to a lipstick case. A paper label of conservative design wraps around the top and each stick is individually cartoned. Case, Owens-Illinois Glass Co., Plastics Division, Toledo, Ohio. Urea Formaldehyde, American Cyanamid Co., N. Y. C.

8 A new Nestlé's Homogenized Evaporated Milk now replaces three former brands; Lion Brand, Every Day and Alpine. The new label carries a small reverse-color box which states the name of the former brand for customer identification purposes. National advertising tells the consumer of the change and plays up the increased amount of Vitamin D.



Aluminum cans . . . developed for pipe tobacco

Early in June, 1944, several tobacco manufacturers expressed a desire to obtain an aluminum container for the packaging of pipe tobacco. Because of the difficulty in obtaining tin-plate and blackplate and because of the availability of aluminum alloy sheet stock at that time, some thought and study were given to the feasibility of making tobacco containers from aluminum.

The tobacco manufacturers reported that large quantities of tobacco were being returned by their retail outlets because it was apparently drying out in substitute containers. To eliminate this trouble, they were anxious to obtain the aluminum cans despite the differential between the cost of aluminum and that of tin- and blackplate.

Initial studies were made regarding the alloys of aluminum to be used. Alloy 3S, one of the widely used alloys of aluminum, was selected because of its good formability. 3S alloy contains 1.2% manganese, the balance aluminum.

Tools already in existence for the manufacture of 8-oz. and 16-oz. tobacco tins at the Federal Tin Co. in Baltimore, Md., were examined and it was felt that with the proper selection of alloy, gauge and temper, the cans could be made in aluminum without any changes in tools. The can manufacturers were anxious to keep their tools in readiness in case they were

able to obtain tin- or blackplate in production quantities for the manufacture of these items in the lower price range.

The tobacco can is composed of four basic parts as follows: the plug or top; the breast or ring; the body, and the bottom. The plug is made on a double-acting mechanical press which automatically blanks the material, draws it to the required depth and beads the outer edge in the same operation. It is drawn to a depth of $\frac{1}{2}$ in., having an inner radius of approximately $\frac{1}{16}$ inch.

The can is easily opened by means of a lever device that can be moved freely around the circumference of the top to loosen the plug at any point. This eliminates use of a tool that might mar the breast or destroy the air-tight fit.

Several test pieces were run and it was discovered that the material could be satisfactorily handled in 3S-O and 3S-H tempers. The "O" designation covers fully annealed sheet and the symbol "H" refers to the hard rolled temper. Tests of the finished plug revealed that the "H" material offered more rigidity and 0.012 in. thick material was specified.

The breast or ring of the can is the most difficult to form. It is made on a double-acting press which blanks the ring of sheet stock and crimps this ring into a formed shape into which the top fits. The body material is then fastened to the outer side by means of the conventional lock seam. Since this ring takes the maximum amount of wear (the plug is taken off and replaced constantly as the can is opened and closed) it was desirable to make this item of heavier gauge metal and 0.014 in. thick was selected. Fortunately, it was discovered that these rings could be made in this gauge and in 3S $\frac{1}{2}$ H temper without any change in the tools.

Several tests revealed an important relationship between the gauge and temper of the plug and that of the breast. A lighter, harder plug, when fitted to a softer, heavier breast, tended to eliminate the possibility of permanent set in the material of the breast. After the can has been in use for some time, the friction fit will become loose if this variation has not been incorporated in the design of these parts.

The side seam of the body was handled without difficulty and it was found that a smoother joint could be obtained in aluminum than was possible in tin- or blackplate because of the ease in cold forming this alloy of aluminum. For the body of the can, 0.012 in. thick 3S-H material was selected. Initial lithographing tests revealed that the same base and color coats could be used on aluminum that had previously been applied to the other metals.

The bottoms of the cans were formed without difficulty. These are made by blanking circles and crimping the outer edge in preparation for the pinch fit to the body of the can. Here again, no change in tools was necessary in using 0.010 in. thick 3S-H metal, the material selected.

A water-soluble lubricant, similar to that used in regular can manufacturing procedure, was satisfactory in all cases.

The first sample cans were well made and attractive in appearance. Manufacturing and handling costs were slightly less than those previously estimated for tin- and blackplate, in view of the ease in handling of the aluminum. Minor adjustments had to be made to compensate for the magnetic feeds into the lithographing presses, since aluminum is a non-

1—Aluminum can is made on same machinery as tin-plate.





2—A few of these lithographed aluminum tobacco containers were found on dealers' shelves before recent tightening of aluminum sheet supply. Supply is shut off at present, but these containers should have increasing future use if they can compete in price with tin and blackplate cans.

magnetic material. This, in addition to the caution in handling the easily dented aluminum, was the only variation from standard manufacturing procedure.

Cost studies indicated that the aluminum can was more expensive than the tinplate or blackplate container of similar size. The differential was found to be almost entirely due to the initial cost of the material. The price of aluminum may eventually, after the war, drop to the point where this differential will be considerably reduced.

Care had to be exercised in supplying clean aluminum sheet, since excess oil interferes with the lithographing and is somewhat harmful to the tobacco. The base lithograph coat was applied without difficulty and the entire lithographing operation proved most satisfactory.

Drop tests were conducted on both partially filled and filled cans and it was discovered that the 3S alloy dented somewhat more easily than did the tin-plate items. It was found, however, that the dented sides of aluminum cans could be easily repaired by pressing the can back into shape.

Preliminary tests revealed that the seams of the first cans were being too severely formed and that subsequent cold working caused a failure at this point. An adjustment in the side seam forming operation largely eliminated this difficulty.

Moisture tests were conducted by selecting random cans and filling them with water. Although leakage was found in a small percentage of the cans, it was estimated that with tools designed for using aluminum, a water-tight dry package could be readily obtained.

Can manufacturers have generally indicated their surprise in finding a minimum of difficulty in changing over from tin-

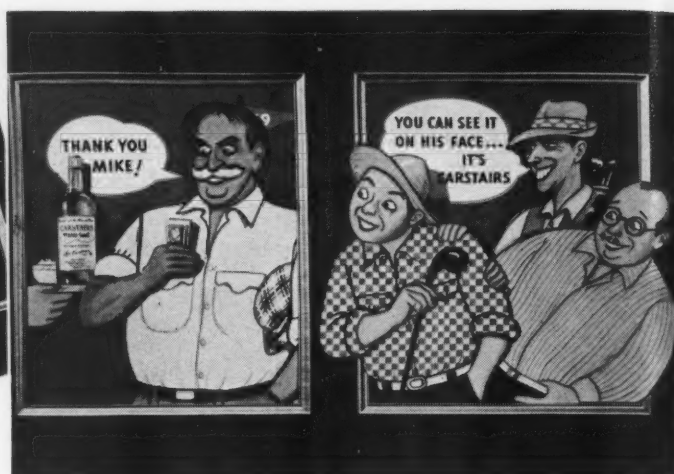
plate and blackplate to aluminum. In fact, the most significant thing about the use of aluminum cans for tobacco is that it has tended to remove any doubts in the minds of can manufacturers as to the feasibility of using aluminum in this manner.

Granting that aluminum tobacco cans may be considered largely an emergency measure, it is nevertheless true that had it not been for this emergency, the development of the aluminum can might have been delayed several years. Now can makers have had the chance to demonstrate to their own satisfaction that the use of aluminum for cans is entirely feasible.

The supply of aluminum for this purpose is currently shut off because of the recently revised estimates of war needs. When stocks currently in dealers' hands are sold, there will be no more aluminum cans for the time being. Whether or not tobacco packers will be using aluminum cans post-war, the experience gained has been helpful and has added considerably to the packagers' store of knowledge about aluminum. To the natural advantages of the metal—which include attractive appearance, light weight and non-toxic properties, may now be added the factor of ease in forming.

Careful tests must, of course, precede any general use of aluminum in the canning field. At the present time, prospects for aluminum cans seem brightest for dry products. Investigation will undoubtedly reveal many uses for aluminum cans that are justifiable at the present prices.

CREDITS: Aluminum, Aluminum Co. of America, Pittsburgh; cans, Federal Tin Co., Baltimore; lithography, Heekin Can Co., Cincinnati, and Federal Tin Co.; opening device, The Lev-a-Lift Co., New York.



1 and 2—Carstairs new promotional display pieces are sent to retailers in pairs. Each pair tells a complete story and the sets are planned to fit into the various types of outlets.

Companion displays keep a name alive

Human memory fades fast. It is said that 30 seconds after seeing an advertisement the mind will have forgotten most of the details. In the case of displays, this fact is further complicated by the necessity of dragging the eye to the display before even a first impression can be made. Carstairs Distilling Co., Inc., makers of White Seal whiskey, have, therefore, followed a consistent policy of making each and every one of their promotional display pieces as unusual as possible in order to impress upon the consumer's mind the merits of the product they have for sale.

In addition, display material for White Seal is being issued in a continuous stream even though the company could sell all the available White Seal without running a single line of advertising copy or putting up one display. This policy is followed in order to keep the name alive in the minds of the public until the day when competitive selling will again be the rule.

The latest display pieces for White Seal whiskey consist of 12 framed cartoons distributed to retailers in pairs. As can be seen in the illustrations, the pieces are companions and must be hung together, each pair making one cartoon. They are meant for all those outlets where liquor is consumed on the premises—bars, grills, bowling alleys, cafes, hotels and clubs—but they operate also to promote the sale of the packaged product.

These pieces fulfill most of the prerequisites for good displays. The art work was done by an expert in the field. The technique is unusual. Colors are brilliant and well chosen.

Sell copy is not too blatant but is there in every set. Subject matter is sufficiently diverse to cover almost every type of outlet. No two are alike. All are easy to set up and they are constructed solidly enough to assure a long life.

They were well thought out in advance and, almost certainly, will command wall space instead of waste basket space as is the fate of a good number of the displays intended for hotel, club or bar use.

At the very inception of the idea, Carstairs felt that the

art work was of the utmost importance. Poorly executed cartoons could ruin the whole series. In order to avoid this possibility the company decided to have the famous Cuban caricaturist, Conrado Massaguer, make the drawings. He will be remembered in New York art circles as one of the founders of the Dutch Treat Club and a frequent contributor to the old Vanity Fair. Massaguer was flown from his home in Cuba to New York to do the job. The ideas and subject matter in the 12 pieces were the result of long collaboration on the part of the artist, the display manufacturer and Carstairs' advertising department.

The result of this collaboration is a series of displays entirely different in construction and conception than has ever been attempted before. Each picture achieves a third dimensional effect by means of a cutout figure superimposed on the background, which is a rectangle of fairly heavy solid-colored paperboard. The figures are fastened to the background at the bottom only and, because of the stiffness of the paperboard from which they are made, they lie flat against the frame for shipping.

Before the retailer hangs the pieces he simply pulls the figures forward and fastens them into position by means of strategically located scored tabs which are bent over and inserted into slots provided for them. The arms and hands of the figures are separate cutouts glued to the bodies. These extra pieces also extend out from the portion to which they are fastened and are held in place by very shallow perforated tabs. All the tabs, in fact, vary in depth to achieve the desired third dimensional effect.

As can be seen, each one of the characters has some portion extending over the edge of the frame, accentuating the cartoon effect. For this reason, the pieces have been likened to the technique used by George McManus, creator of Maggie and Jiggs, in his pictures which hang in the background of the famous comic strip. Carrying the cartoon idea still further, all sell copy is done by means of character conversations using the familiar balloon for the lettering.



After assembly, each picture is fitted into a rigid wooden frame and held in place by means of small metal holders. The frames are gilded and provided with a metal hanging tab.

The companion pieces are then sent in pairs to various outlets throughout the Eastern territory where White Seal is sold. The characters in the pieces were planned from the very beginning to fit into almost any type of outlet. For example, in Fig. 1, the old college graduate and the college professor could fit into a university club while Fig. 2 is a natural for a country club bar. Fig. 3 fits into a railroad station or in any bar frequented by workmen and Fig. 4 was intended for a bowling alley. Fig. 5 illustrates that every contingency was considered when making up this complete set. It is a general subject but planned for a specific purpose. These two were made to be hung vertically in cases where only a vertical wall space is available. Fig. 6 is meant for a men's club bar or a hotel lounge.

White Seal as a brand was introduced in 1939 and, according to the company, by December of 1941 it had become the best seller in the 17 Eastern states in which it is distributed. Much of this phenomenal growth was achieved through the intelligent use of promotional material—advertisements, give-aways and displays. Since Pearl Harbor, the liquor situation being what it is, no one brand could really be called a competitive leader. But Carstairs does not intend to have its present lead taken away, come peace—not if promotion can keep the name alive despite shortages.

CREDIT: Display manufactured by Kulay Advertising Displays, Inc., New York.

3—This display is meant for a railroad station or any bar where workmen are apt to congregate. Note that all the pieces have a portion of the figures extending over the edge of the frame. 4—A pair for the bowling alley. 5—This set is designed for any outlet that has only a vertical wall space available. 6—The distinguished-looking gentleman and the typical movie butler are intended for the carriage trade.

DISPLAY GALLERY

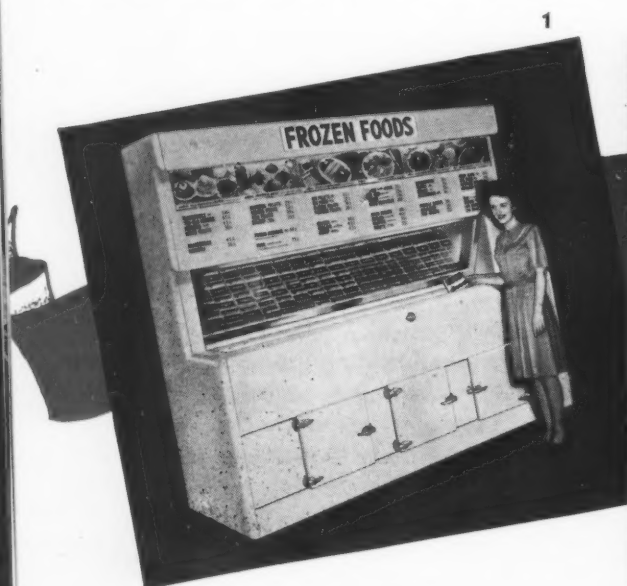
1 This cabinet brings to the frozen food field the same type of modern self-service merchandising equipment already available for other refrigerated products. The new cabinet is 8 ft. long, 82 in. high and 30 in. deep. At the top, a fluorescent lighted frosted glass sign calls attention to the department while below it is a fluorescent lighted panel board listing with price indicators all merchandise for sale. The mirror under the panel board reflects the merchandise in the open compartment while behind the panel is a waterproof night cover ready for instant use and to cut down on operating expenses. The open compartment accommodates 250 average size packages and a storage space underneath provides 17 cu. ft. more space for merchandise. So far WPB has not released material enough for the manufacture of these cases but tooling is being done to build thousands similar to the sample shown immediately postwar. It is interesting to note that this case has been designed to line up with the wall-type dairy cases made by the same company. Case, Tyler Fixture Corp., Niles, Mich.

2 The United Drug Co., for National Pharmacy Week, created this display to encourage young people to consider a career in pharmacy to help counteract the growing shortage in that vital field. The main theme of the entire window emphasizes the dignity of the profession. The centerpiece is a reproduction

of a painting done by George Rapp of New York and the rest of the window has been dressed with prescription drugs to tie in with the main theme. Lithography, U. S. Printing & Lithograph Co., Brooklyn, N. Y.

3 Air conditioned candies are another postwar promise—this one from the Robert A. Johnston Co., makers of candies and chocolates. This cabinet is air conditioned to keep a constant temperature of 65 deg. F., which, it is claimed, keeps the candies as fresh and attractive as the day they were made. It is planned for self-service and its gleaming white interior is fluorescent lighted. The upper display section will hold eight dozen boxes while an additional eight dozen can be fitted into the bottom storage section. Display, The Federal Store Equipment Co., Milwaukee, Wis.

4 A life-size cut-out in full color of Aunt Jemima against a background of Aunt Jemima Ready-Mix for pancakes and buckwheat cakes has resulted in from 68 to 246% increase in business on these two products in stores throughout the country, according to The Quaker Oats Co. The easel-mounted display is adaptable and can be used with either a large number of packages as shown; in a window, as a feature; or with a few packages in a restricted area, according to the floor space available. Display, W. L. Stensgaard & Associates, Chicago.





3

5 Retailers handling Gorman's Shampoo are provided with easel-mounted cards in two sizes with which they can build either window or counter displays complete with product. The cards are lithographed in full color and reproduce faithfully the front of the package itself simply adding the sell copy "ask for." The folding carton for the shampoo is interesting in that it has a die-cut window in front which allows the blue label on the bottle to show through, making a colorful package. The carton is yellow and black on white, designed to make a frame for the blonde tresses of the girl on the label of the bottle itself. Display and carton, National Lithograph Window Advertising Co., New York City.



4



5

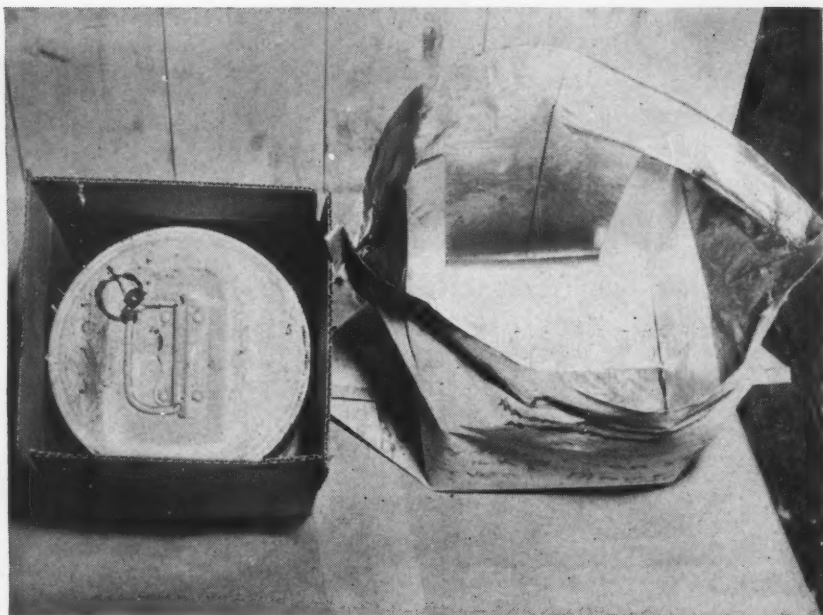
6 In order to boost sales, Durkee's has inaugurated a spice drive which will feature certain spices for each season of the year. As the program got under way during the holiday season, cookie spices were featured in this display throughout the country. The base of the display is made by the retailer by covering a box with an offset-printed strip in color which not only suggests Durkee's spices but gives variations and suggestions for making unusual cookies by the additional use of spices. Recipe booklets containing six basic cookie recipes plus 25 variations flank the boxes to round out the display. New displays are being planned for release from time to time. Display, Charles Offset Co., New York City.

6





1



2

1—Showing 10-ft. afterbody of torpedo heat-sealed in cloth-paper-foil envelope and packed in shipping box with $\frac{1}{4}$ -in. cork pads at hold-down points. 2—Package units for gyro mechanism, which is (1) wrapped in wax paper, (2) sealed in metal can with silica gel and special plastic holder, (3) placed in a larger metal can with more silica gel and held by spring clips, (4) tape-sealed double can put in corrugated carton, (5) carton sealed in moisture-vaporproof pouch and the whole packed in nailed wooden box.



TORPEDOES IN PACKAGES . . . ready for action

A torpedo is a most intricate and expensive item of a ship's armament, difficult to manufacture and costing approximately ten thousand dollars. The Navy considers a torpedo valuable enough to warrant sending out small boats to track down and recover those which have been fired for practice.

Today, on their way to the battle area and even after arrival there, the three components of this expensive weapon are effectively protected against the moisture which is their most persistent foe by heat-sealed, envelope-type bags of a laminated metal foil, paper and cloth combination, costing only a few dollars. When the envelope is stripped off, the torpedo is ready for action.

In wartime, the value of a torpedo to the men whose lives may depend upon its effectiveness is not calculable in mere monetary terms. Not only is it essential that the torpedo be delivered undamaged in the area where it is to be used, but it is also extremely important that it be delivered ready for immediate use.

Yet until comparatively recently a torpedo destined for shipment to the South Pacific—a voyage taking several weeks—was merely coated with a preservative and packed in a wooden box. The damp climate in that region of the world made it necessary to unpack the torpedo as soon as it was received and check it. Under ideal conditions it was then stored in a special dehumidified building for protection against fur-

ther damage from climate until such time as it was needed.

But more often than not there was no such building available. In spite of the preservative, checking often showed that corrosion had damaged some of the delicate mechanisms. Cleaning the rusted inside of the afterbody, which is the part of the torpedo housing the propulsion mechanism, was a difficult process because the smoothness of the shell's inner surface is interrupted with strengthening ribs.

Officers at the Naval Torpedo Station in Alexandria, Va., felt that it should be possible to devise a simple package to protect such an important ordnance item from corrosion during shipment and, further, to protect it indefinitely in storage in its original wrappings, eliminating the necessity for dehumidified storage buildings and saving many man-hours formerly required to clean and repair the mechanisms.

Working with the Packaging Section of the Bureau of Ordnance and two packaging suppliers, they evolved a bag made of a laminated material of cloth, paper and metal foil with a heat-sealing agent coated on the foil side. With material of this kind it was possible to construct a bag which had the necessary physical strength and which was an effective barrier against the entrance of moisture vapor.

Under the packaging program developed by the Alexandria Torpedo Station with the cooperation of the packaging suppliers, each of the three main components of the torpedo is packaged separately.

The exterior of the afterbody, which is about 10 feet long, is still coated with a rust-preventing oil, one of the new polar compounds. By the addition of atoms of oxygen, nitrogen or some other element, oil molecules are polarized; that is, one end of each synthetic molecule is attracted to water and metal. When the polarized oil is coated on a wet metal surface, it actually displaces the water, instead of remaining on the surface of the water.

The afterbody is then placed in an envelope-type bag of the laminated cloth-paper-foil material. The wide overlaps are heat-sealed at the ends and top of the envelope, and in addition the top seam, which extends the length of the envelope, is secured with moisture-vaporproof tape. Before sealing, silica gel is placed in the bag to absorb any moisture in the enclosed air.

Another envelope, made of similar laminated cloth-paper-foil material and also enclosing silica gel, protects the exploder mechanism, or fuse.

The third and most delicate component of a torpedo is that very small but most essential mechanism known as the gyroscope. When the afterbody is buffeted about by the waves, it is the gyro that holds the torpedo on course and takes the accurately aimed projectile to its mark. Extreme precautions are taken, therefore, to see that the gyroscope is not damaged during shipment. After it has been wrapped in wax-impregnated paper, it is placed in an enameled metal can where a plastic holder prevents movement. Silica gel is placed in this can and the cover is fitted on and sealed with a moisture-resistant sealing tape in conformance with Specification Army-Navy T-12. As a further precaution, this can is placed inside a slightly larger can containing additional silica gel. Spring clips on the inside of the second can and its cover serve to hold the smaller can in place.

Cover of the second can, which is fitted with a handle for convenience, is also sealed with tape. The double container is next put into a corrugated carton. Without such a carton, the metal container might damage the package's final covering which, for this component, too, is a moisture-vaporproof laminated pouch.

So packaged, the three main components are ready to be packed in wooden boxes and shipped to the battle areas. Reports recently received from forward areas indicate that

torpedos packaged in this manner are arriving in perfect condition.

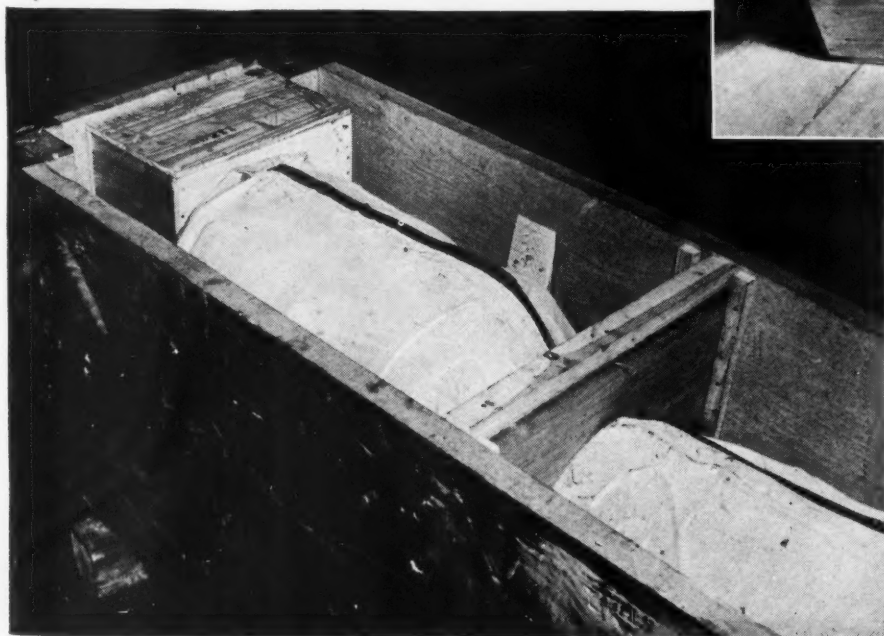
Accompanying each torpedo is a record book which contains a complete chronological log of that torpedo. Every repair or change must be recorded there in detail. As a finishing touch on improved torpedo packaging, just as each component is protected from moisture damage, so too is the record book encased in a moisture-vaporproof envelope. But in this case the material used is merely a paper and foil combination, for it is obvious that the envelope for a book does not need the strength supplied by the cloth in the packaging material for a heavy metal afterbody.

It is still too soon to say with accuracy exactly how long torpedos can safely be stored in their original packages, but recently completed tests have shown that protection is certainly adequate for many months and it is probable that they can be stored in these wrappings with absolute safety for at least twice as long as the present maximum safety period. Preliminary results would thus seem to indicate that such careful packaging is well worth while and it is expected that the Bureau of Ordnance will soon issue instructions for all torpedo stations to adopt the moisture-proof envelopes.

CREDITS: Material "Shell-flex" made and fabricated by Shellmar Products Co., Mt. Vernon, O.; material "A-50" by Reynolds Metals Co., Richmond, Va., fabricated by Diaphane Bag Corp., Philadelphia, Penna.



3—Another foil-laminated pouch encases the exploder mechanism, which is finally packed in a wood box similar to that used for the gyro.
4—Showing placement of the packaged gyro at the far end of the shipping box.



Seeing Music... before you buy

If anyone has the slightest doubt about the selling power of display packaging, let him take a look at what the illustrated album package has done for the phonograph record business.

In six years, the picture album cover has become a major factor in the sale of not only pop records but serious music as well. What such packaging has done for the record industry may throw a hint to other businesses looking for reasons to dress up their products in a competitive postwar market.

The customer who goes into a music store today to buy an album of records takes the picture album as part of the purchase for 50 cents above the list price of the records contained in it. This price of the album does not cover its cost, but this expense—charged to advertising—is little indeed compared with the increased volume of record sales it produces, according to the three leading companies in the business: Victor, Columbia and Decca.

Not only do the picture-album packages tempt the shopper to buy records by sight as well as sound, but they mean a combination sale of always more than one record and sometimes as many as eight in a single album.

A notable recent example is the resurrected Victor recording by Yehudi Menuhin and Georges Enesco of the Bach "Double Concerto in D Minor" brought anew to public notice by the simple device of a picture package. With two violins dramatized on the cover, this sold more copies in a month than in a preceding decade without the illustrated jacket. When Columbia issued the Beethoven "Ninth Symphony" in an illustrated album containing eight 12-in. records selling for \$8.50, sales jumped 894% above the previous six-month period when the album was covered in gray cloth. Other recent Columbia successes are Nelson Eddy's Gilbert and Sullivan Patter songs—three 10-in. records selling at

\$2.75—showing an increase of 274% above the previous six-month period when the package was unillustrated. Columbia's Stravinsky "Sacre du Printemps"—four 12-in. records for \$4.50—showed an increase in sales of 481% over a comparable six-month period of the undecorated album.

An article in August 1944 MODERN PACKAGING* pointed out that the future of record sales lies in the direction of self-selection and self-selection is being made more attractive by the introduction of the picture album covers. Yet the record industry was slow in discovering that what an album looked like was almost as important as how it sounded.

In Europe picture albums have been in existence for years, as issued by Gramophone and others, but in America the first attempt seems to have been made around 1926 when Victor

* Self-Selection for Phonograph Records. Page 106.



issued a Mother's Day album with a picture cover. Nobody at RCA Victor remembers whether or not the illustration was the inevitable "Whistler's Mother." In 1929, C. Bruno and Son, predecessors of Bruno-New York, Inc., Victor's Manhattan distributor, brought out a "Treasure Chest" of light classical favorites. The treasure chest motif appeared in color on the cover. The Hayes-Griffin Music Shop in New York has lost all track of an illustrated album of tangoes they are supposed to have issued in 1932. In 1933 Brunswick took a forward step and brought out a 12-in. album of popular tunes from Jerome Kern's "Show Boat," illustrated with scenes suggesting the Broadway production, but the policy was not pursued in the serious music field.

Nobody seemed to take the idea seriously until October 1934 when Decca introduced the first of 29 sets of children's records—Mother Goose Rhymes on 10-in. records, in a gaily illustrated envelope. These were among the first of the picture covers for children's records and were, according to Decca, the first full-sized children's records. Previously children's records had been six- or seven-inch disks. In March 1938, Decca introduced an album of French songs for children. The cover was a checkered design in the French tricolor, but there were no pictures. About the same time Decca introduced a set of native Hawaiian songs in an album on which the cover was an exact reproduction in color of native Hawaiian tapa cloth, prepared through the cooperation of the Hawaiian Society.

In 1938 also, Decca, which specialized in pops and current show hits, began dressing up its albums inside and out with performance photographs of the stars and casts. Decca still continues to use the photographic technique widely—with

photographs of stars and occasionally reproductions of their signatures on the covers of the albums.

Decca, then a comparative newcomer to the United States and unhampered by the tradition of highbrow classical recordings in durable dark covers with gold letters, had no sedate tradition to overcome in going all-out for the picture albums. By 1938, when other companies were just beginning to issue popular pictorial albums, Decca was in the lead and its production of packaged current selections was as well established as periodical magazine publishing.

The company has talent scouts to cover previews before a show or movie reaches Broadway. As a rule by the time it reaches the Great White Way, records are made and the album is designed with either photographic illustrations from the show or color illustrations typifying the highlights of the hit, ready for distribution to dealers all over the country. Notable current examples are the Decca albums for Judy Garland in "Meet Me in St. Louis," for "Bloomer Girl," and for "Winged Victory." On January 18, Decca was ready with an album of recordings from "The Three Caballeros," the new Walt Disney picture opening shortly after that date in New York—complete with Disney illustrated album.

This time element is an angle to packaging which the manufacturer of soaps and breakfast foods does not have to contend with. A new package or a redesign may be thought out carefully, but once it is ready for the market, the manufacturer expects it to remain the same for at least a few years. In the pop record business, a new package must be designed for every new issue—which means quick and continual flow of new ideas.

Victor did not begin to issue popular albums until January



2

1—Producing record albums introduces a time element in packaging unknown to the manufacturer of soaps and breakfast foods. When these current shows and movies reached Broadway, picture albums were on dealer shelves.

2—Victor claims to have pioneered in art covers for classical music like the ones shown here. The Bach Double Concerto, with two violins on the cover, sold more copies in a month than in a decade without pictures.



3—These stylized Columbia albums have increased sales by several hundred per cent above previous six-month periods when the albums were covered in somber cloth. Picture albums were taken seriously in 1938.

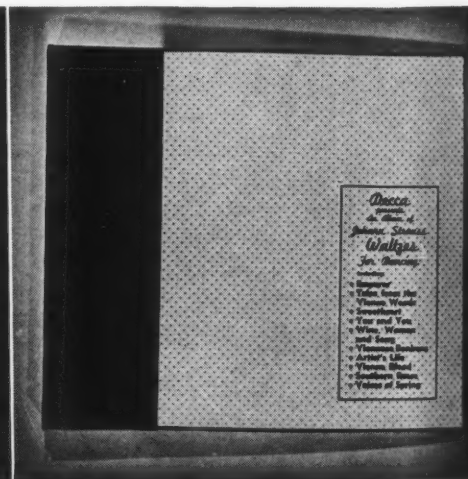
1938, with the release of "A Night at the Waldorf" by Leo Reismann, Eve Symington and Xavier Cugat. The cover for this one, as for many of the early pop albums issued by all the companies, was a photomontage—in this case the performers scrambled up with the gleaming new twin-towered hotel.

Victor started pioneering in the field of art covers for classical music. But this pioneering came quite by accident, the company states, as an inspiration from posters sent each month to dealers announcing the month's releases. This poster, which was to hang in record stores and player booths, featured a four-color lithographed plate which illustrated, or attempted to capture the spirit of, the month's featured musical selection. One day in 1938, a group of the company's advertising and promotion men were examining the proofs and noticed that the color plate for the poster was exactly the same size as the album. Why not, one of the promotion executives suggested, apply the picture of Brahms

walking in the woods near Vienna to the album containing the Brahms "First Symphony," and see what happened? The advertising manager agreed and sales on this single album bounded up approximately 40%.

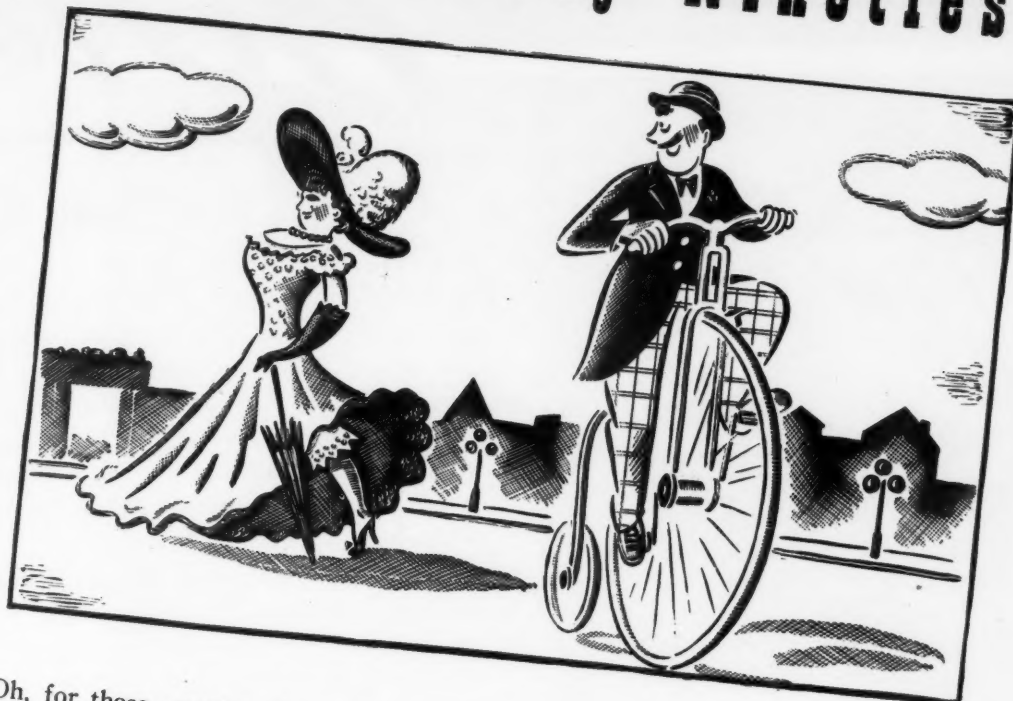
Thereafter, Victor immediately began issuing a picture album each month, featuring the new release on which most publicity and advertising were concentrated. A 35% general increase in comparison with non-picture albums brought about an expansion of this program.

No expense has been spared in the art used on the covers of record albums. Both Victor and Columbia have taken prizes for their albums in the annual Art Directors' exhibits and at the yearly exhibits at the Philadelphia Museum of Fine Arts. Many leading artists and illustrators have designed record album covers. Victor has had covers by such men as H. M. ("Skeets") Rundle, Frank Decker, Henry Stahlhut and Charles Barnes, who did several (Continued on page 152)



4—Decca made a start with children's Mother Goose sets in illustrated envelopes in 1934. Then came albums with decorative paper covers; finally full-color pictures inside and out.

Oh, Those Gay Nineties



Oh, for those nostalgic days when a man was a man and corn was on a cob—when you smoked a bull-dog pipe and women wore bustles and rats—but no nice girl ever used rouge. At least, not where she could be seen!

Modern packaging has helped to bring out into the open the use of cosmetics. Instead of going to a druggist for a special preparation, the modern woman can order her cosmetics over the phone, under a brand name which she trusts. BURT packages have played a large part in this revolution. For years, the leading manufacturers of drugs and cosmetics have depended on Burt packages.

One reason is that Burt packages are beautiful. The other reason is that Burt packages are not expensive. We are one of the leading manufacturers of small round, oval and square set-up containers. Our containers are made on our own automatic machinery.

Consult Burt now.

F. N. BURT COMPANY, INC.
500-540 SENECA STREET, BUFFALO, N. Y.

New York City - Kansas City - St. Louis - Atlanta - Chicago - Los Angeles - Boston - Cleveland
Cincinnati - Memphis - New Orleans - Minneapolis

SAN FRANCISCO: 220 Bush Street, Yukon 0367
NEWARK, N. J.: 915 Military Park Bldg. Telephone Market 3-0788

CANADIAN DIVISION:
Dominion Paper Box Company, Ltd., 468-483 King Street, West, Toronto 2, Canada

MACHINE BUNDLING SAVES UP TO

60%

ON MATERIAL COSTS ALONE



Faced with rising costs, more and more manufacturers are turning to machine bundling as an immediate and drastic cost-reducer. *We now have new orders from prominent concerns for 19 of these machines.*

Using strong paper, the machine makes a tightly wrapped bundle that stands up in shipment and handling so well that even compressed coal blocks are being bundled in this way.

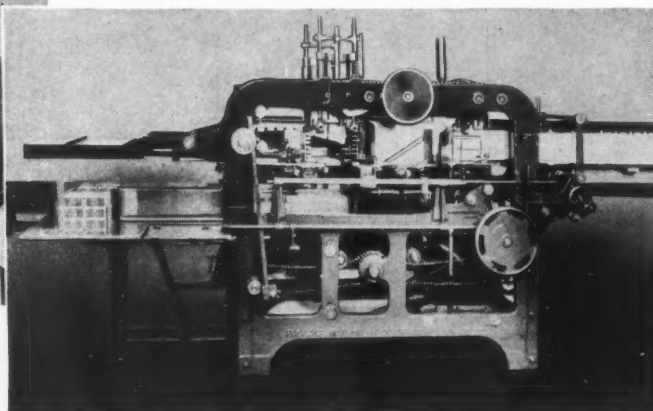
And when you remember that the bundle replaces a made-to-order carton, you can see what a saving it would make in your material costs—not to mention labor. Shipping costs are also lowered, for the wrapping material weighs only one-third as much as cartons.

The machine can be fed directly from the individual wrapping or cartoning machines, and will assemble packages in various groupings—one layer, two layers, three layers, etc. Automatically attaches end-seals.

Write today for our circular on Machine Bundling

PACKAGE MACHINERY COMPANY
Springfield 7, Massachusetts

30 Church St., New York 7 • 111 W. Washington St., Chicago 2
101 W. Prospect Ave., Cleveland 15 • 443 S. San Pedro St., Los Angeles 13
32 Front St., W., Toronto 1



MODEL F-10
Quickly
adjustable for
various sizes

PACKAGE MACHINERY COMPANY

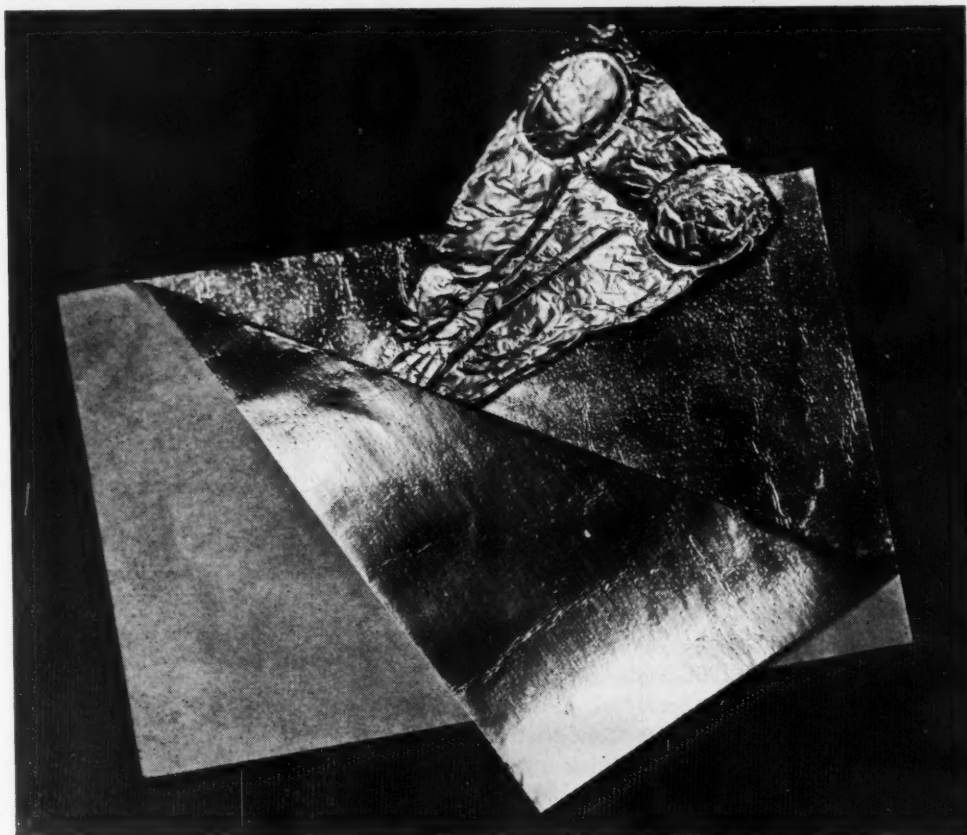
Over a Quarter Billion Packages per day are wrapped on our Machines

TECHNICAL SECTION

CHARLES A. SOUTHWICK, JR. TECHNICAL EDITOR

• MACHINERY
• PRODUCTION
• TESTING

1—Surgical instruments are tightly wrapped in bright aluminum foil, then heat-sealed in a moisture-vapor-proof envelope which is a lamination of kraft, asphalt, foil and a thermo-sealing cellulose film. Any corrosive action is cathodically directed to aluminum foil inner wrap, leaving stainless steel instrument unaffected. Wrap was developed by the Army Medical Department.



PHOTOS, COURTESY REYNOLDS METALS CO.

Cathodic protection with aluminum foil wrap

by Maj. J. A. Calamari*

In protective packaging of surgical instruments for the Army Medical Department, the factors of long-time storage and exposure to elements in climates ranging from tropical to arctic, as well as the additional hazards of war-time transportation, must be considered. In addition to water and moistureproof requirements, the packaging material must be as chemically inert as possible and it must not liberate acidic substances harmful to instruments.

Stainless steel surgical instruments when properly fabricated are already protected against atmospheric corrosion to a remarkable degree by an invisible film which forms at the surface of the metal. However, proper fabrication in certain types of instruments is not always possible because of peculiarity in design. Certain corrosion-inducing conditions may exist because of the design of the instrument and the treatment of the metal in fabrication.

Atmospheric corrosion, the most commonly encountered type, is primarily of electro-chemical origin. Electro-chemical corrosion is caused by the formation of any electrical

mechanism which permits the metal to dissolve progressively. A precipitated compound of the metal is visible evidence of corrosion which, in the case of iron and iron alloys, is, of course, rust. Electro-chemical corrosion is insidious, as the numerous conditions for the formation of an electric cell upon a metal surface are ever present, singly or in combination and such a cell may actually be within the metal.

Electro-chemical corrosion cells can form in the following manner:

- a) By contact of the metal with a less chemically electro-positive metal in the presence of moisture.
- b) By contact with compounds which become the positive pole of the electric cell in the presence of moisture.

Either of the mechanisms (a) and (b) may be an intrinsic part of the metal.

- c) By contact with non-conducting materials such as wood, plastics, paper, stone, paint and porcelain, about which contact areas moisture can collect and form

* Medical Administrative Corps, United States Army.

oxygen concentration cells; i.e., a non-uniform distribution of dissolved electrolytes.

To illustrate this point further, moisture collection at the point of contact between a metal and non-conductor will vary in concentration of dissolved oxygen, with the highest concentration at the surface having free excess to air. This difference in concentration establishes an electromotive force across the wet surface of the metal with the negative pole at the point of lowest concentration. Only the negative pole of the electric cell corrodes.

One method of corrosion-prevention packaging for metals which might be considered applicable to surgical instruments is the moisture-barrier type known as Method II. Here, the duration of protection is limited by the useful life of the barrier material, by the soundness of the seal, by the rate of moisture transfer and by the amount of desiccant used. Under external conditions of high atmospheric temperature and humidity in long storage, this method could permit sufficient water-vapor to enter the package thereby causing corrosion.

Silica gel is used in Method II to maintain humidity at a low level; however, it is not intended to remove water vapor completely and sudden cooling could conceivably cause precipitation of the moisture. The capacity of silica gel is limited and, on long-time storage, the humidity within the package may rise to an equilibrium level not much different from the external atmosphere.

The moisture barrier package, even with liberal use of a moisture scavenger, is not, in our opinion, satisfactory protection for long-time storage of stainless steel surgical instruments. Packaged instruments are prone to the additional hazard of "contact" corrosion. Rusting due to this cause is often observed on stainless steel instruments at points of contact with wrappings and packaging materials and in the case of wax-dipped instruments at the points of failure in the coating, from which corrosion proceeds underneath.

2—Showing results of tests on two high-carbon steel surgical blades, one (above) wrapped in aluminum foil, shows no corrosion, other (below) wrapped in neutral paper, shows extensive contact corrosion. Tests were conducted at 122 deg. F., 95% relative humidity for 11 days.

2



In the initial experiments with packaging and protective materials, methods in use were tested. The methods are:

- a) Coating the instruments by dipping in molten micro-crystalline wax.
- b) Same as (a) and, after coating, the instruments are packaged in heat-sealed, laminated bags of regenerated cellulose and wax.
- c) Packaging the instruments in heat-sealed, laminated bags of regenerated cellulose and wax.

These methods failed to protect the instruments against corrosion in atmospheres of high humidity at 120 deg. F. and during immersion in water for four-day periods. Failure was due principally to contact corrosion and, in instruments that were not de-activated, rusting due to galvanic action also occurred.

It has been observed that aluminum in contact with stainless steel and in the presence of moisture develops a counter electro-motive force (EMF) of sufficient magnitude to protect the surface of the instruments against both galvanic cell and contact corrosion. It has also been observed that stainless steels wrapped in aluminum foil (not sealed) do not corrode when exposed to environments which cause many instruments to corrode: namely, exposure to high atmospheric temperatures and humidity, immersion in salt water and immersion in distilled water. Contact corrosion is inhibited when the instruments are wrapped in aluminum foil since aluminum is chemically more electro-positive than the stainless steel. Moisture condensing at points of contact forms galvanic cells in which the aluminum becomes the negative pole and the stainless steel the positive pole. The corroding action, in this manner, is directed to the aluminum and the instrument is thereby protected.

Aluminum was selected as the most satisfactory metal for this purpose because it becomes anodic in the galvanic couple formed with metals commonly used in the fabrication of surgical instruments and because dilute solutions of aluminum salts hydrolyze readily, forming insoluble precipitates, thereby contributing very little to the conductivity of the solution. Other metals which develop a favorable EMF, such as magnesium, zinc, etc., can form salts which do not hydrolyze and cause precipitation of the metal as readily; they, therefore, can contribute to the conductivity of the solution.

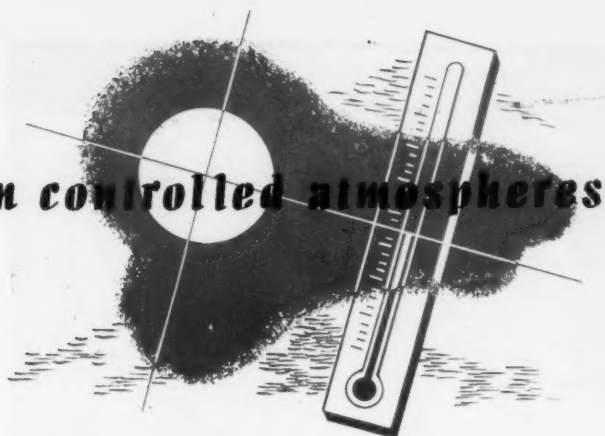
The primary purpose in the packaging of stainless steel instruments, such as box-lock instruments, is the prevention of corrosion and binding in the box lock. The de-activating or passivating treatment plus the oiling of the box lock with a saturated, inhibited, hydrocarbon oil accomplishes this objective, but, in storage, especially over long periods, moisture, dust and temperature fluctuations can reintroduce conditions favorable to electrolytic corrosion. Packaging in moisture-proof barrier materials protects the instrument against dust and reduces the access of moisture to the instruments to a minimum, but in packaging the instruments there is the further hazard of contact corrosion.

Storage for indefinite periods or mechanical failure of the package may allow sufficient moisture to enter to cause oxygen concentration cell corrosion to occur. By using aluminum foil wrapping, the contact corrosion hazard is eliminated by the protective galvanic action. In addition, the close conformity possible with fully annealed aluminum makes it an ideal oilproof wrap with considerable economy compared with Grade A papers generally used in parts packaging.

Even though oil in the box lock and aluminum foil wrapping has protected stainless steel (Continued on page 146)

Package Testing . . . in controlled atmospheres

by Thomas H. Rhoads*



In the design and construction of a package for the protection of its contents from moisture or from the loss of moisture from the contents through the package, it is evident that a humidity cabinet for testing purposes is necessary. It is logical that before spending any time on the construction of the package itself the material for the package should be tested as to its value for withstanding moisture. The technique for testing paper and structures of other package-forming materials has been pretty well covered and specifications giving accurate methods and means for making these tests have been formulated and established.

These tests, however, resolve themselves into bringing the paper or other structure into two classes: those that have a low value for moisture-vapor transmission and those whose MVT is too high to be used. These values vary for different types of packages depending upon protection necessary.

However, after the paper or structure has passed this first test and is made into a package a second test should be made upon the package itself with the contents that are to be used in the package together with a control. This testing of packages brings in certain factors that were absent in the testing of the paper and it is these new factors which determine whether or not the package will serve the purpose.

The rate of moisture transfer through the package may or

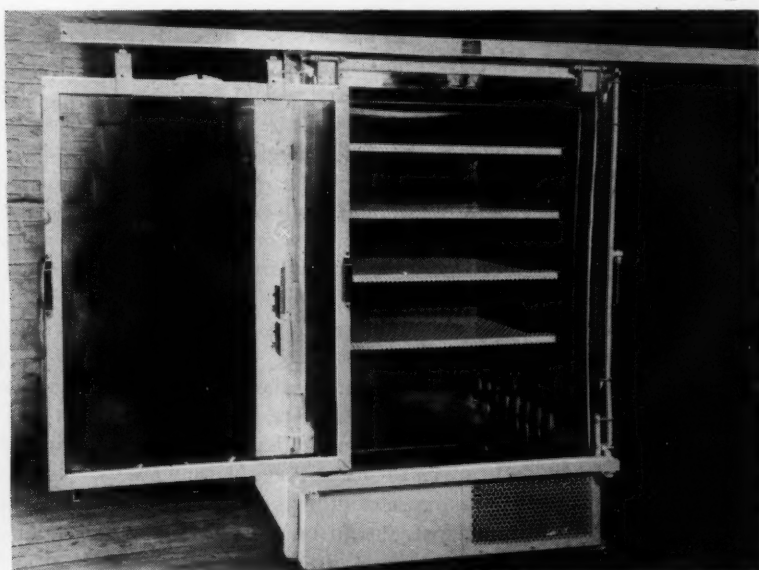
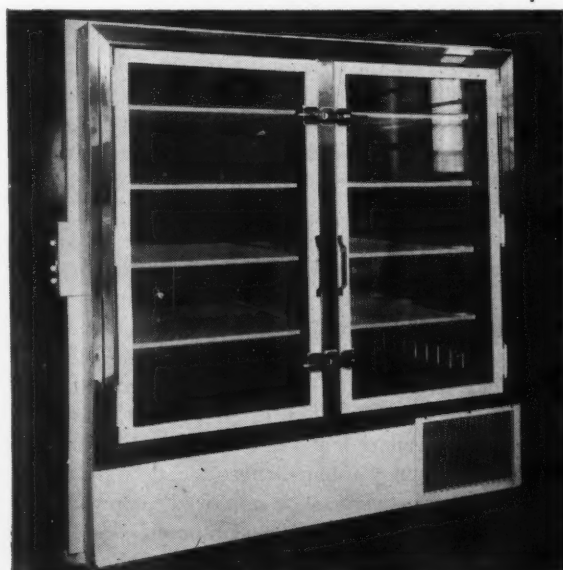
may not follow the same rate as determined in the test on the package material. There are many reasons for this (in addition to the creases, folds, seams, seals, etc.): the equilibrium moisture content of the material in the package; the contact that it makes with the inside of the package; the chemical reactions that may go on in the presence of moisture with the material; also the type of inner lining of the package itself. Most of these factors are present and affect the moisture-vapor transfer rate through the walls of the package. These are all additional factors that differentiate the package test from the material test. It is evident, therefore, that a package-testing cabinet is not only essential but must be designed to give certain characteristics.

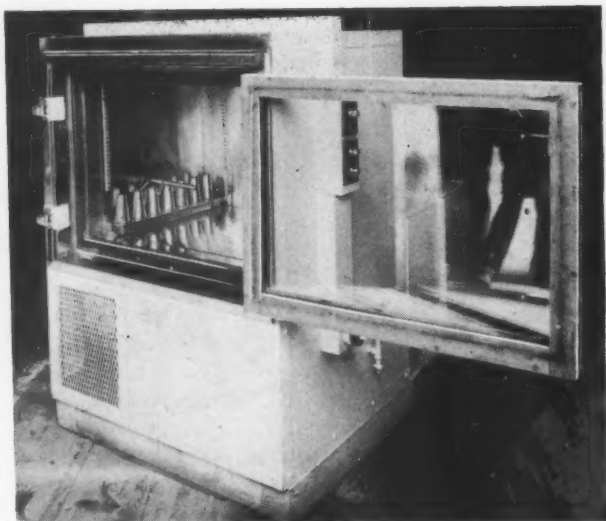
Roughly the cabinets can be classified in three types. The first functions at a high humidity; the second functions at a low humidity and the third functions at low temperatures. Of these three, the first two are probably the most important. In the first type, the condition most generally used for high humidity at the present time is 100 deg. F. and 90% relative humidity. In the second type, the preferred condition for dry atmosphere is 100 deg. F. and approximately 35% R. H.

Some tests have been made in a dry cabinet with temperatures as high as 120 deg. F. and 18% relative humidity and there are rare instances where the temperatures have been as high as 130 deg. F. It is obvious that the low-humidity

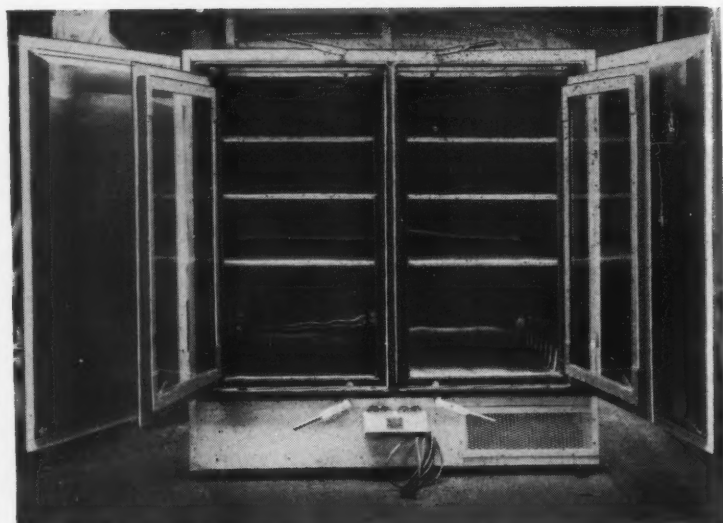
* General Manager, Package Materials Labs., Long Island City, N. Y.

1—Large humidity cabinet with heated doors and special jam heaters to operate continuously on high humidity and temperature. Holding capacity, 72 cu. ft. 2—Single sliding door humidity cabinet with heated door and jam, to operate at 100 deg. F., 95% relative humidity. Holding capacity of this one is 36 cu. ft.





3



4

3—Small cabinet for operating at high and very low temperatures and the entire range of humidity. Holding capacity is 4.25 cu. ft. 4—Double-door type of humidity cabinet which operates at 100 deg. F. and 90% relative humidity is for testing moisture penetration of packages. It has a holding capacity of 72 cu. ft.

conditions are only valuable where it is desired to maintain a certain moisture content for the material inside the package and this moisture content is not to be decreased due to losses in moisture. These instances, however, are limited, and the most important package test is at a high humidity where it is desired to keep moisture from passing into the product.

There is another consideration for testing of packages in humidity cabinets and that is the evaluation of the package after different lengths of exposure. The surest and simplest approach to this problem would be weighing the package itself at regular intervals and relying upon gain in weight as a criterion of the efficiency of the package. This, however, may not always be exact, for in the event of chemical reaction of the contents in the package due to the added moisture, of volatile ingredients such as flavors, or oxidation of the product, the net weight gain will not be a true index. It is sometimes necessary, therefore, for products that are known to have such weight changes, that the products be subjected to a quality test after different lengths of exposure in the cabinet.

It is also necessary that a certain control be used with each test. This control should be a package which may be considered as standard or adequate for the product. It should be filled with the product desired to be tested and a second control should be filled with a dehydrant such as calcium chloride. In addition to this, a determination of the equilibrium moisture content of the product should be made, giving the moisture in the air inside the package as related to the moisture in the product itself. This will give an indication and a means of determining the moisture content of the inside air space of the package, which is a very important factor affecting the rate of moisture transmission.

An empty package can never be used as a control because moisture passing through the package to the inside will increase the humidity to a maximum and cause the package materials to absorb an abnormal amount of water. This same package with a desiccant or normal product will absorb only sufficient moisture to come to equilibrium. Also, a dry inner surface will act as a far better barrier than the moist.

The final test that can be given to any package is using the contents themselves for the purpose of judging the degree of preservation. Samples, therefore, should be taken from the cabinet at various intervals and, in addition to the weight

gain tests, the contents should be prepared and consumed.

These considerations show the value and even the necessity of a humidity cabinet, but the design and construction of a cabinet for controlling temperature at high humidity must cover certain essential points.

The air circulation throughout the cabinet should be uniform or as near uniform as possible. A very good means of controlling air circulation at a constant value is to have the air circulation reduced to a minimum, as the air velocity passing over a package will affect the amount of moisture that is transmitted to and from the package.

It is also necessary that the humidity be so controlled that there is no condensation on the side walls or on the packages themselves, as this condensation of moisture on the package will invariably increase to a considerable extent the rate of moisture passing through the package.

Another factor to consider is the size of the cabinet. The minimum time for a complete test is usually several weeks; the maximum may run as high as six months or more, with samples being taken from the cabinet at various intervals. A large number of packages are required for each test increasing rapidly if several tests are run at the same time.

In further regard to the air circulation, it should always be considered that the cabinet should have the same effect on the package whether the cabinet is partially filled or completely filled; allowance being made, of course, that the packages will not be packed against one another but with sufficient space (not less than $\frac{1}{2}$ in. minimum) between the surfaces of the adjoining packages. The shelves should also be adjustable for different heights.

Possibly the most important factor in the design of a cabinet is the controlling mechanism. The dry bulb and wet control alone are not sufficient to control the humidity, prevent condensation and at the same time keep the air moist and at the proper value. There must be additional and technical adjustments so that the humidity is not only constant but at all times below the dew point. The proper design must also include proper heat insulation and devices for the elimination of all condensation from the doors, sills and side walls of the cabinet. Automatic means must be employed to prevent any failure in circulation, temperature and humidity, as failure of any one of functions may be costly in time and labor.

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ONE of the most convincing proofs we can offer of the optical quality of Eastman Acetate Sheet is its use in Polaroid Night Adaptor Goggles. These goggles, worn by military personnel before going on night duty, eliminate lengthy adaptation to darkness, assure maximum night vision after the first few minutes.

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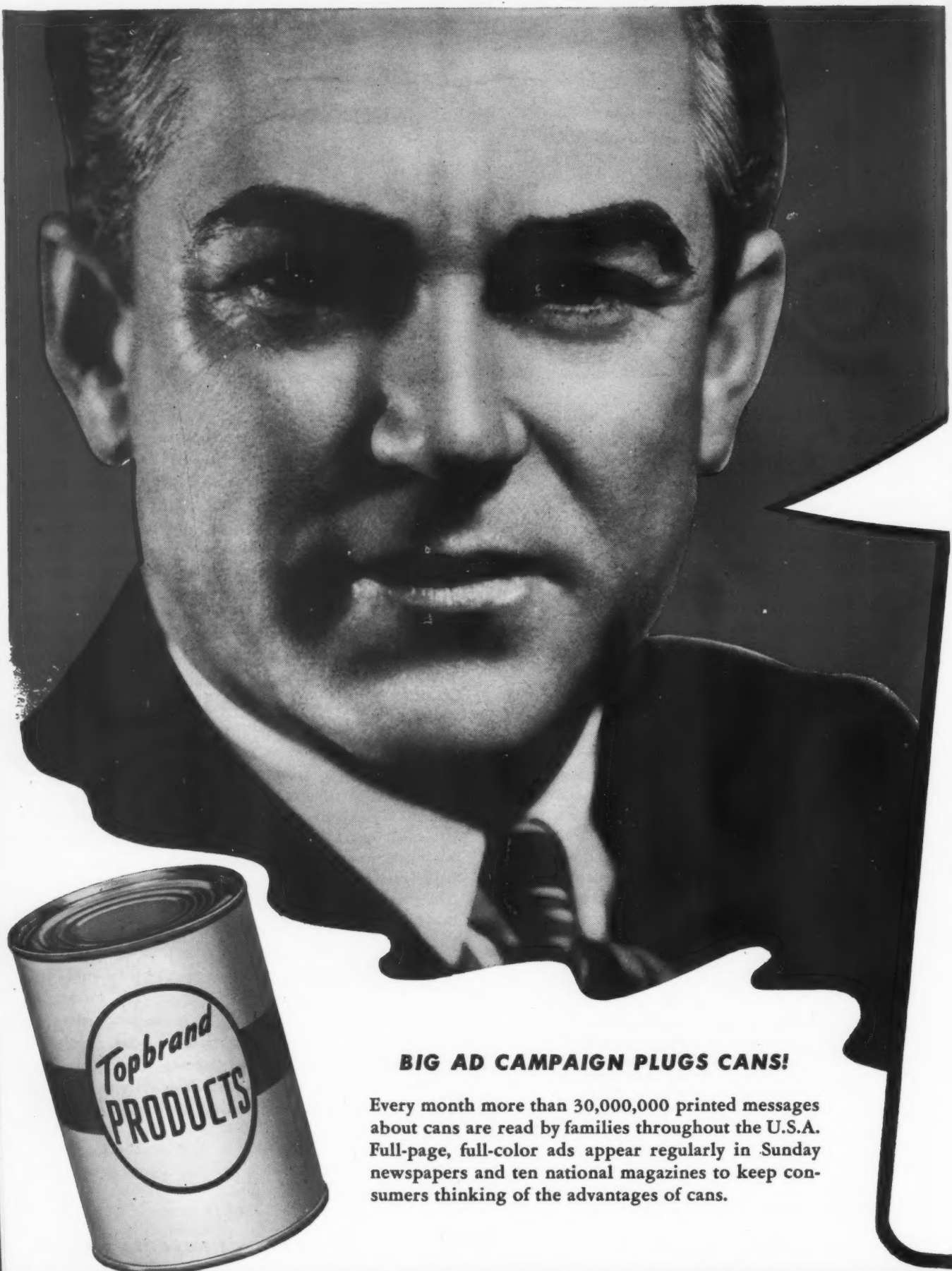
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**CANS ARE SO
TROUBLE-FREE**
...ideal for packaging
my **PRODUCTS!**

**Cans don't break... they shut out air and light
... are best for shipping, storing, and display**

● "Let me tell you why, as a manufacturer, I prefer my products in *cans*...and why cans prevent headaches for retailers and consumers, too.

"In the first place, cans don't break. They don't chip, split, or tear. And they're light and compact. That makes canned goods economical to handle, pack and ship, and easy to store.

"And cans make most attractive and effective displays. Their prominent and

brightly colored labels (which can be lithographed right on the cans) attract the eye, make brand recognition easy, and help move goods. Furthermore... light-proof, airtight cans protect the quality of their contents, prevent light-deterioration and spoilage.

"Yes, sir... I've always preferred my products in *cans*. So have my customers. We'll all hail the day when *more* products can be packed in cans!"

5 MAJOR REASONS

**Why Consumers Prefer
GOODS IN CANS**

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2. Goods in cans keep better, longer.
3. Cans prevent air- and light-spoilage.
4. Cans are more convenient.
5. ...And more economical.

CAN MANUFACTURERS' INSTITUTE, INC., NEW YORK



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KEEPING up to schedule on Uncle Sam's orders has had both you and us working under forced draft these many months. Crown plants, manpower, machinery and materials have been devoted exclusively to the production of plane parts, gas mask canisters, munition boxes and cans for packaging military supplies and food and essential civilian products. But we have planned for the day when we can say: "Send us your orders for consumer cans!"

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QUESTIONS and



This consultation service on packaging subjects is at your command. Simply address your questions to Technical Editor, Modern Packaging, 122 East 42nd St., New York 17, N. Y. Your name or other identification will not appear with any published answer.

Over-packing glass

QUESTION: *One of our line of novelty products is a glass tumbler which we receive from the glass company in partitioned, corrugated containers. We, in turn, package each tumbler in a separate carton for our specially item, and ship units of six or twelve of these tumblers in cartons, packaged in partitioned, corrugated containers, in which we receive them from the glass manufacturer. The tumblers arrive at our plant in these shipping cases with practically no breakage. However, when we repack them in cartons and put them back in cases with strips of corrugated for additional protection and send them to our dealers, we have constant complaints of breakage. Why?*

ANSWER: The tumblers which are received in your repacking plant come through without undue breakage because they are rather loosely held in the corrugated dividers. This means that they are protected from receiving shock by the corrugated dividers and are kept away from contact with each other. However, when you repack these tumblers in cartons with strips of corrugated for additional protection and use the original shipping containers and dividers, you are introducing a great deal of additional material, which means that the finished container is holding the tumblers under slight compression. The result is that when the shipping case is hit or shocked, the force is transmitted directly on the tumblers. These tumblers are not straight sided but have a slight flare and, therefore, the shock is taken entirely by the edge of the glass. A heavy blow, for example, on the side could be transmitted to an entire row of tumblers in the container and could break each one.

It is my suggestion that you re-design your package to eliminate some of the corrugated strips, so that the tumblers are not under compression when the final shipping case is closed. You can probably leave out the interior corrugated strips in the carton and use corrugated pads as a case liner.

Long-fibre paper for powder boxes

QUESTION: *Recently, our company started to manufacture face powder containers and has built an automatic machine. We are quite satisfied with the way this machine is operating; however, we find that the kind of paper which we are using for the bottom part (the part which consists of the shell and a disc which extends forming a flange) is not quite suitable as it is breaking where stretched over the bottom flange. We are using standard glazed paper for this purpose. We find that when using parchment instead of glazed paper, the container is 100% satisfactory as the parchment has a much better stretch when wet from the glue, than the glazed paper.*

After having tried various glazed papers, we came to the conclusion that the reason for not being able to make a perfect job does not lie in the construction of our machine, but in the kind of paper we are using. We feel that the paper required is about 0.0025 caliper, which, when wet, has the necessary stretch and strength for the operation. Can you suggest the proper paper for this application?

ANSWER: It is quite apparent from the description of your equipment that you require a paper which can be deformed when

wet, without tearing or perforating. The glazed paper you were using has no strength when wet because it has very short fibre. Parchment works satisfactorily because parchment is very strong when wet and, therefore, undergoes the forming operations without failure. You can probably use any paper with a very long fibre, although there may be considerable improvement if you use a paper of the so-called wet-strength type. The example of such a paper would be a kraft paper treated with melamine resin. Such a long-fibred sheet, whether or not it is treated with wet strength agents, would operate satisfactorily as far as the forming operation goes, but would not give you as attractive a surface as you are now obtaining with the glazed paper. This difficulty can be corrected by using a sheet which is well finished on one side and applying a film of gloss lacquer on this surface. With the use of pigments or dyes, you could probably develop a very attractive appearance. The lacquer coating can be formulated to stand the wetting and stretching operation without checking or lifting, as clay coating or other water-base coating might.

You must appreciate that you have a highly specialized problem and you should cooperate very closely with your paper suppliers to obtain the proper specification of base paper and coating for the most successful solution.

Silica gel for cookies?

QUESTION: *I am aware of the fact that silica gel is being used very extensively in war packaging work and serves the purpose of keeping the air around metal parts in a dry condition. The thought occurred to me that this idea and material could be used in the home to keep cookies and crackers and other food products dry after the original package had been opened. Do you see any objections to using silica gel in this manner?*

ANSWER: Silica gel has been extremely successful in the preservation of metal parts for war packaging and, as you say, its effect is to dry out or dehydrate the atmosphere surrounding the part and thus prevent condensation or increasing humidity which would result in corrosion. You must bear in mind, however, that silica gel is placed within a tightly sealed water-vapor-resistant barrier and that when the package has reached its destination, the gel is usually discarded. In some cases provision is made for indicator cards and transparent windows so that the humidity of the air in the package can be checked occasionally. This is necessary because silica gel has a limited capacity for absorbing moisture and if the gel becomes saturated or used up, the package would then act as though it did not contain any gel. The point is this—that war packaging silica gel is used only once or if it is reused, it is reactivated by a carefully controlled process. Such reactivation is not a difficult process, but it would be tedious and involved for the housewife and, unless the gel were activated from time to time, it would not stay in a condition to absorb moisture. If this happened the cookie jar would be as humid as though it contained no gel whatsoever. Then, too, the absorbing time of the gel would be greatly reduced unless the housewife were very careful to close the package tightly.



WASHINGTON REVIEW

R. L. Van Boskirk, Washington Editor

● **The Glass Decision**—Significant legal principles are involved in the Supreme Court decision in the glass container industry anti-trust action. The 4-to-2 decision upheld the Toledo district court in requiring the seven defendant companies to license their existing machinery patents and ordered the dissolution of the Glass Container Assn. as "an important instrument of restraint and monopoly," but it definitely called a halt on the Justice Department's effort to use the anti-trust laws as an instrument of attack on what the Department considers monopolistic rights when those rights are conferred by the patent law itself. In effect, the high court refused to use the judicial system to "legislate" changes in the patent system.

The decision pointed out that validity of the glass patents was not in suit and that avenues are open for cancellation if any of the patents were improperly obtained. It directed the termination of the Hartford-Empire Co. receivership set up by the lower court and the return to that company of its business and some \$14,000,-000 of impounded royalties.

The Supreme Court rejected all "punitive" measures against the defendant companies, holding that they were entitled to reasonable royalties on licenses, but ruled out damages for past infringement. The net effect was to wipe the slate clean and apply only standard anti-trust restraints to the glass companies.

Two Justices, Black and Rutledge, issued sharply worded dissents, holding that the lower court was correct in every respect. Justice Black agreed with the Toledo court that the Glass Container Assn. was valuable to the industry as a statistical and research body, but the majority opinion not only dissolved the association but enjoined the defendants for a period of five years from forming or joining any such association.

● **Strict Enforcement Due for L-317**—It is well known that there have been flagrant violations of this order, which sets quotas for the number of containers that may be used by various industries. Some of the violations have been honest mistakes—others have been deliberate and deceitful. WPB officials are aware of this situation and now have a fixed plan of attack for prosecution of violators.

The order has always been difficult to

police because it is based on the weight of containerboard used. It was felt that this method of economizing would be far more satisfactory than limiting the number of boxes. However, WPB officials have an undisclosed plan for trapping violators and will henceforth take off their kid gloves.

The greatest difficulties have been with the re-shippers, who are expected to fill their glass and can containers and reship them in the same carton that brought the unfilled containers to the processing plant. These containers are classified as new and should be charged against the shippers quota. If he has no quota, he should apply for one. Officials admit that there may have been honest mistakes in the interpretation of this order, and in such cases they will be less severe in their prosecution of violators, but it is going to take a lot of proving to convince the Government that the mistake was honest and not deliberate.

It is probable that L-317 will be revised, with stiffer restrictions than in the past and a partially new policy of administration.

Carton production has gone down over the last few months due to lack of raw materials and manpower. On top of this, there is a tremendously increased military demand which will continue as long as our armies are on the march. This situation had disturbed the balance between supply and demand with the result that many quotas which were based on 1942 use will have to be reduced and there will be decidedly fewer shipping containers for civilian consumption.

There have been numerous appeals on this order from people who were out of business in 1942 and now want more boxes; from those who succumbed to the victory's just-around-the-corner atmosphere that prevailed in the fall of '44 and increased their civilian production but could find no containers in which to ship them and from the manager who has far more business than he had in 1942 and now wants more boxes in which to ship his product.

● **Blow to Collapsible Tubes**—An amendment to M-38 provides that during the first quarter of 1945 lead can be used in collapsible tubes and foil only up to 30% of the amount used for these purposes

during the first six months of 1944 and prohibits the use of lead foil for seals and labels or for any decorative purpose. Unless some modification is granted, this will have a serious effect on all civilian products packed in collapsible tubes.

● **Steel Substitutes for Substitutes**—Restrictions on use of metal for cans and for closures for glass containers have been changed to permit the use of steel instead of substitute materials some of which now are more critical than steel. The revision of M-81 lifts all restriction on use of blackplate and waste steel and sets up a schedule for use of tinplate and terneplate for cans. Actually, this is a manpower-conservation measure, the WPB says, since "in many instances, less labor is required to make and fill metal containers than is required for comparable substitute packages."

But packers are warned that, despite this relaxation, they may not be able to buy metal containers for some time, and that anyhow the relaxation may be revoked at any time due to the "uncertain situation in the materials field."

● **Protective Papers Available**—Another move labeled as conservation is the amendment to M-286 making available certain protective papers—including glassine, greaseproof and vegetable parchment papers—for packaging rubber and rubber goods, tobacco and tobacco products, coffee, tea, potato chips, corn chips, popcorn, certain drink products and general printed products. Officials explain that the package life of these products will be increased and a waste of fibre due to spoilage and repackaging avoided and that a saving of pulp fibre will further be effected by the elimination of heavier weight sulphite papers that have been employed as substitutes.

● **Rejuvenating Re-Use**—Unfortunately, there has been some relaxation in the re-use campaign despite the Container Division's constant warning that containers are going to be scarcer in the near future than they have ever been in the past. Part of this is no doubt due to the general feeling of optimism that was current before Von Runstedt and Gen. MacArthur started their galloping. No matter whether an army moves forward or backward, the supply picture becomes

more critical because additional supplies are needed to replace lost items in one case and to keep up with advancing troops in the other.

Perhaps another cause for the slackening of the re-use campaign was a report that a large soap company, together with some cosmetic and drug companies, had sent out word that they did not want any more used containers. The report was generally misinterpreted; it held no implication that the container shortage was at an end. The company in question, like one or two other big concerns, had done an unusually good job of salvaging used containers in 1942 and its quota for new containers was therefore much less than that of other companies. For example, its normal usage may have been 100,000 new containers, but it was able to use 30,000 old containers in 1942, so its quota for new containers was set at 70,000. The restrictive order was particularly hard on this company and in order to make up their shortage they resorted to the use of some obsolete cartons which they had found in some forgotten corner. These obsolete containers, plus a warehouse full of used cartons, made it unnecessary for them to seek to accumulate additional used cartons and they accordingly notified their suppliers that none would be needed for the time being. The letter was misinterpreted by many who heard about it and resulted in a feeling that the container shortage was easing up. But such is far from the case. The soap company was merely holding off for a short time until they could use some of their accumulated boxes.

WPB officials continue to stress the point that re-usable containers will be more valuable in the next six months than they have ever been before.

Wooden Containers—The situation in nailed wood boxes, wirebound boxes, plywood, containers, baskets, hampers and cartons, slack cooperage and wooden beer barrels continues to grow worse. Tight cooperage is fairly free except for whiskey barrels. Egg cases are probably more critical than any other wooden container.

The reasons are that the Army and Navy need heavy containers and use far more wooden boxes than were ever used in normal times for shipping purposes. Furthermore, the War Food Administration has expanded farm production every year and that means additional boxes, crates and baskets for food shipments. In addition to the constantly increasing demand, there is a steadily decreasing supply of lumber and increasing handicaps in the manufacture of cooperage stock and veneer. Manpower, equipment, trucks and tires are the principal limiting factors. One producer from the South who makes nail keg staves has just reported that his mills are closed because he can get no men to work in them.

Officials are insistent that there will be serious shortages as long as the war lasts in Europe. They urge that users locate and use second-hand containers. A great many have accumulated around military posts and each post has a procedure for buying and selling used boxes. Large industrial users also may prove fruitful ground for digging up used boxes.

One example of efficient re-use is credited to the powdered egg industry which has developed a virtual shuttle service for sending their processed eggs in slack barrels from the processing plant to the packaging plant and return.

Closures—The Containers Division is sitting tight on the closure situation at the present. They think they have what is needed for the first quarter and are waiting to see what develops before they make drastic moves to affect second-quarter deliveries.

They permitted unrestricted use of metal for closures last December but it may be that the shortage of sheet metal will force a return to the use of lighter plate. It is even possible that paper will again have to be used in many cases.

Plastics closures are in a confusing state. The Chemicals Bureau has temporarily discontinued the allocation of phenolic for closures and has suggested that users may switch to urea.

Aluminum—Perhaps the most surprising shortage is that of aluminum. Supposedly there was going to be enough aluminum to build a ladder to the moon. But the increased military demand was apparently more than anyone could foresee. The principal trouble is not aluminum, nor facilities, but manpower. For example, an aluminum sheet mill had discharged several hundred workers because orders from aircraft companies had dropped off following the curtailment of the airplane program last fall. Users dipped into their stockpile and placed no new orders and the sheet mills consequently laid off many workers. Then when the new expanded program came into being there were not nearly enough workers to handle the job. During the first week in January, the company staged a tremendous publicity campaign with its story spread all over the front pages of the local papers in an effort to get back its old workers and any new ones that might be attracted. It is believed that their program was successful in a large degree but there is no prospect that the overall picture in aluminum is going to be satisfactory for a long time to come. In fact, the WPB has instructed Alcoa to close its order books on aluminum sheet for the first four months of 1945.

The use of aluminum as a substitute for other metals in packaging has not been too successful. Aluminum closures do not appear to be the answer to the metal closure problem. The experimental aluminum can program did not get far, al-

though a few tobacco cans were marketed. Users were hesitant about going into aluminum because they could not be assured of a permanent supply.

Aluminum foil for a short time looked like it was going to be plentiful, but now it appears that the military services will take all that can be produced, despite the reduction in use of foil as anti-radar equipment.

Production of collapsible tubes has not increased to any extent because of lack of facilities. Aluminum tubes take heavier presses, annealing ovens and lacquer; it is not possible to take tin-lead equipment for manufacturing tubes and process aluminum with the same machinery.

Revised Estimates—Since the publication of the report on the 1945 outlook for various materials in this department last month, there have been radical changes caused by the new Government policy of planning for a longer war with Germany. We are printing the revised estimates on a few of the most important materials and those in which opinion has crystallized. Others are still in doubt, but it is safe to say that practically all materials used in packaging are going to be scarcer than most of the trade realized two months ago.

Folding and set-up boxes: This situation is even tighter than it was at year-end, and it is possible that the 40% set-aside for military needs will have to be raised.

Fibre drums: Still adequate for current demands, but prospects for maintaining production level depend on availability of container board and the container-board situation is becoming more critical every day.

Copper: Increased requirements for use in small arms program and for heavy artillery shells make the copper outlook more critical than ever.

Tin: Supply situation is still serious, since 90% of supply before war came from Dutch East Indies and Malaya States. Demands are constantly increasing. Navy demands for maintenance and repair are up. More tin is needed for metal food cans for overseas shipment, not only for the Army but also for civilians in occupied areas.

Lead: M-38 was revised December 26, cutting first-quarter civilian consumption to 60% of amount used in similar period of 1944. It will not always be possible to make this cut immediately and individual users may use more than this at first, but will have to catch up later. Therefore, full effect of conservation may not be evident until April.

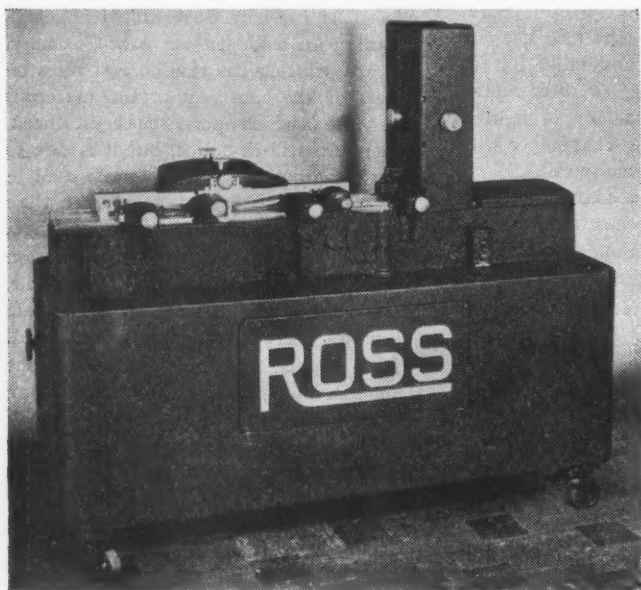
Machinery: Situation has taken a change for the worse in the last month. Aluminum, in abundant supply two months ago and available as a substitute for more critical materials, is now extremely critical itself due to increased demands for airplanes. Copper, used in small arms program, and stainless steel are also increasingly tight.

Equipment and Materials

CARTON-FORMING MACHINE

A. H. Ross & Co., Ludlow, Ky., announces its new semi-automatic carton-forming machine, having a capacity range from 40 to 120 cartons per minute, specially designed for quick change-over from one size carton to another. This machine forms and tucks one end, discharging on a conveyor with the open side up, so that operators may insert the load quickly in pace with the machine.

An outstanding feature of this machine is its simplicity of adjustment to change from one size carton to another—a few turns on a half-dozen dials, conveniently accessible, and the job is done. A complete detailed chart is furnished with the machine which has recorded dial settings for each size carton so that change overs can be made quickly even by inexperienced operators.



The magazine feed has an interesting device which automatically shows a red light when the supply of carton blanks needs replenishing. Should the operator neglect to reload the magazine, the machine automatically stops and the red light continues to flash until the line is again running.

All parts coming in contact with cartons are chromium plated hardened steel; shafts and moving parts are equipped with grease-sealed ball bearings; all gears and friction parts run in oil; and operating speed is controlled by a master speed range drive, operated by a slight turn of a wheel. The company states an innovation in the designing of the mechanism of the machine is that wherever possible, bearings, gears, chain, etc., are standard units obtainable anywhere to facilitate obtaining replacements locally should this be desirable. A contributing factor here is the fact that all units of the machine are standardized to close tolerances, so that repairs, wherever secured, will fit without adjustment.

Now being developed is the company's fully automatic unit which will have a speed of from 150 to 200 cartons per minute, varying with the load to be inserted. This model will form, fill and close the carton. Machine will be produced in two sizes, covering the full range of carton sizes in general use.

PROTECTIVE COATING — STRIPPING TYPE

"Protektol"—a transparent stripping lacquer—has been developed specifically for the protection of polished or easily marred metal, glass or ceramic surfaces by Ault & Wiborg Corp., New

York. This transparent liquid plastic, basically, is water-white in color, but may be obtained in transparent colors such as red, blue and green and in a special rust-inhibiting yellow-green of zinc chromate primer.

It may be applied by brushing, spraying, dipping or roller-coating. Supplied ready for use, it may be reduced with a special reducer, to adjust viscosities to suit variable conditions and equipment. Supplied at a normal viscosity for spray application, it can be handled by almost any standard spraying equipment, provided the equipment is of such nature that proper atomization can be secured. Tests show that when the product is not reduced, it handles best with 35 lbs. of atomizing pressure and 18 lbs. of fluid pressure in a standard pressure feed tank. If sprayed from a pressure cup, 30 to 35 lbs. of atomizing air and about 8 lbs. of fluid pressure give the best results.

In addition to being useful as a protective film to prevent damage to surfaces caused by handling and fabricating on parts prior to assembly, it may also be used on finished products such as ceramics and glass to prevent abrasion from dust, dirt and fingerprints. Applied in a normal film thickness and under normal conditions of temperature and humidity, it is said to dry to touch in five minutes, to handle in fifteen, and to strip in 30. Stripping is achieved simply by prying loose and lifting off.

IMPRINTED PRESSURE-SENSITIVE TAPE

International Plastic Corp., Morristown, N. J., announces the availability without priority of a new line of printed transparent "Filmonize" cellophane tape printed in black with name, trade mark, instructions or advertising message. A minimum order of nine rolls, or nine-roll multiples, is required and message may be printed in one to three lines depending on size of labels.

HOT DIP PLASTIC

Ernst Bischoff Co., Inc., Plastics Division, New York, announces the availability of "Thermo-Cote" hot dip plastic made from ethyl cellulose which affords protection for metal parts for overseas shipment. A melt of the material may be obtained by heating pieces of the plastic in a heating and dipping tank with controlled temperatures of 350 deg. to 375 deg. F. preferably and then submerging the cleaned, cold metal piece, using a thin wire or wax cord, into the molten material for a period of 5 to 10 seconds, depending upon the thickness of film desired. Within a few minutes after removal, the film cools to set into a skin-tight, tough coating, satisfactory for handling.

FUNGICIDE-TREATED TAPE

A self-sealing cloth tape embodying a fungicide treatment is now manufactured by Mystik Adhesive Products, Chicago. The fungicide is applied to all components of the tape: cloth, adhesive and backing, which impregnates the tape against water, moisture, salt spray, gases and other damaging elements, the company claims, and protects shipments against fungus growths. Tape may be used as a seal in packing and as a protective covering when applied directly to the product if desired.

PLASTIC DIPPING TANKS

Two new small heating and dipping tanks, incorporating all the features of their larger coaters, are now available according to an announcement by the Youngstown Miller Co., Sandusky, Ohio. These models were designed specially for companies having small parts or tools to be coated. One model has a capacity to melt from 3 to 5 lbs. of plastic per hour with a dip compartment 6 in. wide by 9 in. long and 6 in. deep. Another has a capacity for from 5 to 7 lbs. of plastic per hour and has a dip compartment 9 in. wide 12 in. long and 6 in. deep.

Plants and People

George A. Milton, president of the George A. Milton Can Co., of Brooklyn, has been elected president of the Can Mfrs. Institute. **H. Ferris White** was re-elected executive vice-president and **Clifton Sifton**, secretary-treasurer. The new board of governors is composed of **R. Amundsen** of the Texas Co.; **C. H. Black**, American Can Co.; **S. L. Buschman**, National Can Corp.; **D. W. Figgis**, American Can Co.; **W. H. Funderburg**, Continental Can Co.; **D. M. Heekin**, Heekin Can Co.; **V. K. LeComte**, Le Comte & Co., Inc.; **Milton I. E. Sexton**, Sexton Can Co.; **R. S. Solinsky**, Cans Inc.; **J. A. Stewart**, American Can Co.; **H. K. Taylor**, George D. Ellis & Sons, Inc.; **E. B. Webster**, Crown Can; **C. C. Conway** and **J. F. Egenolf**, Continental Can Co.

Edward E. Deidrichs has been made director of sales of The Arabol Co. and **Charles J. Kasper** has been appointed assistant general manager of the Midwestern division.

H. M. McCormack has been appointed assistant general manager of sales of the American Can Co. with headquarters in New York.

W. B. Lincoln, Jr. has returned recently to his former position in charge of development and research for Inland Container Corp. He has been serving as Principal Supply Specialist in the Packing and Crating Section, Office of the Quartermaster General, Washington, D. C.

J. E. Thomas has been named manager of cement sales in the industrial products sales division of The B. F. Goodrich Co.

Stein, Hall & Co., Inc. and the **Stein-Hall Mfg. Co.** have been combined as of January 1 and will operate under the name of Stein, Hall & Co., Inc. There will be no change in personnel.

Edgar Hubert has been appointed New England sales manager for the Edward Ermold Co., with offices in Boston.

Container Corp. of America's venture into the manufacture of "Slottie" toys of paperboard has now led to the production of a children's book, "The Elegant Elephant," which contains a sheet of Slottie elephants. Published by Rand, McNally, the colorful book has been well received.

Jens N. Mortensen, vice-president of the Fred Goat Co., Inc., was honored at a dinner recently for his 25 years of service.

John W. Little has been elected to the board of directors of Sylvania Industrial Corp. and placed in charge of sales of cellophane, casings for meat and self-sealing bands.

Dr. Franklin D. Smith has been appointed assistant director of development for Monsanto Chemical Co.'s organic chemicals.

The Heminway Corp. is the new name for the **Waterbury Paper Box Co.** as of January 1. There has been no change in personnel except that **Robert E. Crotty**, in charge of the sales office in New York for the past 10 years, has been elected vice-president in charge of sales.

The Harris-Seybold-Potter Co. received the Army-Navy "E" awards for both its plants, the Harris division at Cleveland and the Seybold division at Dayton, on December 11 and 12.

Raphael H. Block, former sales promotion director of the Folding Paper Box Assn. and special Chicago correspondent for MODERN PACKAGING, has recently been promoted to major at headquarters, Ninth Air Force, in France. Major Block entered active duty in April 1942.

George Nystrom has been appointed superintendent of the Chase Bag Co.'s St. Louis plant while **Homer O. Wilson** has joined the sales staff of the Minneapolis office. The Philadelphia office has added to its staff **Arthur A. Brame**, and the newly opened office of the company in Wichita, Kans. is being managed by **J. D. Furry**, formerly sales manager for the Kansas City Plant.

Dr. C. O. Ball, formerly in charge of research for Owens-Illinois Can Co., has been named director of the newly created process and product research division of Owen-Illinois Glass Co.

Dygart & Stone is the firm name of a new package engineering organization set up in Rochester, N. Y. by two men well known in the packaging field—**Howard Dygart** and **J. S. Stone**. They plan to cooperate with manufacturers in working out the best packaging methods for both war materials and civilian products.

David L. Eynon Jr., plant manager of the Longhorn Ordnance Works, which Monsanto Chemical Co. operates for the Government at Karnack, Tex., has been promoted to the position of assistant to the general manager of the company's organic chemical division. **Robert K. Mueller**, general superintendent of production, has been named to succeed Mr. Eynon and will in turn be succeeded by **Robert M. Morris**, maintenance superintendent.

The Atlanta Paper Co. has announced the opening of a branch, the **Nashville Paper & Box Co.** **Whitney T. Evans** will be in charge.

Hans A. Eggerss, president of the Container Co., a wholly owned subsidiary of Continental Can Co., Inc., was recently elected to the board of directors and a vice-president in charge of the paper container division of Continental Can.

Dr. Warren J. Mead, head of the geology dept. of the Massachusetts Institute of Technology has been appointed to coordinate and expand research activities of Reynolds Metals Co.

Container Corp. of America will construct a new manufacturing plant for its Eastern Division in Greensboro, N. C.

W. N. Shepard, formerly assistant general sales manager, has been named sales manager of Plaskon glues and industrial resin, Plaskon division, Libbey-Owens-Ford Glass Co. **R. B. Harrison** of the same company has been appointed sales manager of Plaskon molding compounds.

In order to expand the advertising and marketing program of Interchemical Corp., **John Simonds** has been added to the sales promotion dept. as assistant to **George Whelp**, director of advertising and sales promotion.

Mildred E. Laune has joined Riegel Paper Corp. and the Reigel Textile Corp. as assistant to **Floyd L. Triggs**, advertising manager for both.

Walter J. Foley, for many years research representative in New York for American Can Co., died December 28, 1944.

Robert Liscombe Rice, former manager of the New York branch of International Printing Ink, died November 27, 1944, at Montreal, Canada.

Robert E. Walker, district sales manager for Anchor Hocking Glass Corp., died December 29, 1944, after a prolonged illness.

For Your Information

The Art Directors Club of New York plans to include for the first time a packaging exhibit at its annual show of advertising art to be held at 630 Fifth Avenue, Rockefeller Center, New York, April 10 to 28. An invitation was extended to package designers for entry of completed packages introduced on the market between March 15, 1944 and February 15, 1945. Packages will be included in the award groups under the classification of booklets and industrial design.

Dr. Elmer K. Bolton, chemical director, E. I. du Pont de Nemours & Co., Inc., said recently, when accepting the Perkin Medal for outstanding accomplishments in the field of industrial research, that greatly increased research programs, designed to improve the American standard of living, will be launched by the chemical industry once its laboratories have been relieved of war duties. To show the importance his company attaches to research he quoted a remark made by Lamont du Pont, back in the depression days of 1932: "You know, it is more important to carry out research than to pay dividends."

H. Bennet, Editor-in-Chief of The Chemical Formulary and technical director of Glyco Products Co., Inc., was the editor of a newly published reference book titled "Commercial Waxes." It is claimed that this is the first complete source of information available on the waxes used in industry. Of special interest to the packaging field are the portions on lipsticks, paper finishes, waterproofing of kraft papers, adhesives, foil coatings, waxed paper, hot-melt coatings and plastic molding. The section on Foil Coatings was prepared and written by Harold A. Levey, Patent Editor of Modern Packaging. Published by Chemical Pub. Co., Brooklyn, N. Y. Price \$11.00.

This same publishing company has just issued a new catalog including its recent books on chemistry, technology, physics, general science, mathematics, engineering, foods, formularies, drugs and cosmetics, gardening, medicine, metals, technical dictionaries, etc. Copies are free on request.

If The Toilet Goods Assn., Inc. convention is held, it will be May 16, 17 and 18 at the Waldorf-Astoria Hotel, New York City. At press time it could be stated definitely that this meeting will be held in view of James Byrnes recent announcement.

The executive board of T.G.A. has authorized an annual award for outstanding packaging, to be known as the Charles S. Welch Memorial Award. It will consist of a plaque to be presented each year to the company which, in the opinion of a jury, places upon the market the most outstanding package. Christopher W. Browne, Editor-in-Chief of MODERN PACKAGING, will be the chairman of the jury and the presentation will be made in May.

War Department Supply Bulletin SB 55-14, Processing, Packaging and Packing of Transportation Corps Equipment and Parts, is published for the information and guidance of all concerned. The pamphlet is, for the most part, a chart prescribing the minimum requirements to be observed in cleaning, preserving, packaging and packing of Transportation Corps equipment, spare parts, and tools for overseas shipments.

Food Technologists in Michigan, Northern Indiana, Northwestern Ohio and Ontario, Canada have organized a new regional group of the Institute of Food Technologists. It is to be known as the Great Lakes Group.

The Bureau of Foreign and Domestic Commerce of the Dept. of Commerce has published a handbook, "Containers," which is offered free upon request to any regional office of the

Dept. of Commerce. It provides statistics on the container industry and is published as an aid to manufacturers and distributors of these products in planning for peace.

The first meeting of the display research committee of the Point of Purchase Advertising Institute, recently appointed by Paul West, president of the Assn. of National Advertisers, at the request of the officers and directors of the Point of Purchase Institute, Inc., was held in New York recently with George W. Phillips, advertising director of Cluett, Peabody & Co., presiding. The opening talk was made by Albert E. Haase of the Institute of Public Relations, under the title "Window Display Circulation and Market Coverage."

The regular editions of the 1945 Spring Woolen Card, and the 1945 Spring Rayon Card have just been released to the trade by The Textile Color Card Assn.

Fox holes lined with cellophane are the latest GI invention. Using the moisture-proof gas capes issued to them as protection against possible gas attacks, they are also inventing sleeping bags, shoe linings and rain coats for their health and safety, according to Sylvania Industrial Corp., makers of the special cellophane.

A new bulletin, YM-800, describes the operation and exclusive features of the plastic coaters made by the Youngstown Miller Co. Twenty-two different models with a wide range of dipping compartment sizes and melting capacity are available. Literature free upon request to the company, Sandusky, Ohio.

A dramatically presented bulletin titled "Growing More Trees," has been published by American Forest Products Industries, Inc., describing the industrial importance of wood and emphasizing their importance by the use of full-color illustrations. It tells how good logging is providing for future tree growth and where improved techniques are stretching the timber supply so that trees do more work.

The Annual Meeting of the Folding Paper Box Assn., which was to have been held in Chicago the early part of March, has been postponed for the time being in view of James Byrnes recent announcement. The present executive committee agrees, however, that the meeting should not be entirely cancelled but should be held just as soon as conditions permit. Meanwhile, the present Board and Executive Committee will continue in office. If within the next thirty or sixty days conditions have not improved to a point where a general meeting can be scheduled, consideration will be given to a plan whereby the matters planned for presentation to the entire membership will be presented by the committees involved at various group meetings throughout the country.

The annual meeting of the Technical Assn. of the Pulp and Paper Industry, arranged for February 19 to 22, at the Commodore Hotel in New York City has been cancelled in accordance with the request of the Director of the Office of Defense Transportation. All papers scheduled for presentation will be published in the Assn. medis and distributed to the membership.

CORRECTION: The item on the Minerva Wax Paper Co., which appeared on page 150 of the December issue may have been construed as saying that the company was now located in Cleveland. The Cleveland office in Room 945, Union Commerce Bldg. is the headquarters of R. C. McCaskey, vice-president in charge of sales. The main office of the company is still located at Minerva, Ohio.

U. S. patent digest

This digest includes each month the more important patents which are of interest to those who are concerned with packaging materials. Copies of patents are available from the U. S. Patent Office, Washington, at ten cents each in currency, money order or certified check; postage stamps are not accepted.

Apparatus for Stacking Powder Grains, R. Van Roo, West Point, N. Y. U. S. 2,364,113, Dec. 5. In a machine, a guideway arranged to receive a series of vertically disposed bodies, means for moving the bodies in said guideway, a rockable platform positioned to receive said bodies.

Dispensing Apparatus, F. L. MacNeill (to Standard Paper Goods Mfg. Co., Worcester, Mass.). U. S. 2,364,231, Dec. 5. A dispensing and storing apparatus comprising a casing having rear, front and side walls forming a rectangular tube which is open at its top.

Container and Method of Making the Same, J. C. Morrell, Chevy Chase, Md. U. S. 2,364,234, Dec. 5. A cylindrical container made of a laminated fibrous base impregnated with a binder, and equipped with metal collar embedded therein in interlocking relation.

Preformed Wrapping for Packages, B. Y. James, Miami, Oklahoma. U. S. 2,364,297, Dec. 5. A preformed, collapsible package wrapper comprising a sheet of wrapping materials having score lines defining top, bottom, side and end walls.

Carton, K. T. Buttery (to Sutherland Paper Co., Kalamazoo, Mich.). U. S. 2,364,267, Dec. 5. A carton with end walls hingedly connected to bottom, and corners hingedly connected to end walls, front and rear walls, and formed in interlocking arrangement with each other.

Package, O. H. Hultin (to Pneumatic Scale Corp., Ltd., Quincy, Mass.). U. S. 2,364,364, Dec. 5. A package comprising a carton having side and end wall panels provided with extensions forming the top and closing flaps.

Bottle Capping Apparatus, A. J. Marek (to Kork-N-Seal Ltd., London, England). U. S. 2,364,380, Dec. 5. A capping head for a machine for capping bottles having an annular ledge, comprising an outer casing having a cylindrical bore.

Apparatus for Filling, R. J. Stewart and H. H. Franz (to Crown Cork & Seal Co., Baltimore, Md.). U. S. 2,346,400, Dec. 5. In a filling machine, a reservoir, means to maintain a body of liquid in the reservoir and an uninterrupted low pressure condition above the surface of such liquid with filling head communicating with the liquid containing a portion of the reservoir.

Reclosing Carton, R. Guyer (to Waldorf Paper Products Co., St. Paul, Minn.). U. S. 2,364,439, Dec. 5. A rectangular carton having a portion thereof of double thickness with a locking tab formed adjacent one edge of the outer lamination.

Straight Line Capping Machine, H. E. Gantzer (to Consolidated Packaging Machine Corp.). U. S. 2,364,523, Dec. 5.

In a capping machine a supporting frame, a continuously moving primary conveyor mounted on said frame and adapted to receive a line of containers successively.

Siftproof Package and Side Seam Therefor, H. F. Waters, New York, N. Y. U. S. 2,364,576, Dec. 5. A flat-folded lined carton comprising a four-panel carton blank having a locking panel, a pair of main panels and a pair of side panels, with a sheet of material adhesively secured to said blank in the main panel areas.

Soap Package and Method of Making Same, F. J. Warren (to The Warren Soap Manufacturing Co., Cambridge, Mass.). U. S. 2,364,575, Dec. 5. A paper bag for packaging melted soap and the like, said bag having lines of stitching forming ribs on the inner surface thereof to indent the contents of the bag.

Receptacle Closure, A. Cantor & H. A. Shelsanski, Philadelphia, Pa. U. S. 2,364,126, Dec. 5. A closure for a container provided with a bore extending longitudinally, a puncturable, self-sealing diaphragm carried by said body and the end thereof and extending across the bore and sealing the same.

Closure for Collapsible Tubes, J. W. Mossett, New York, N. Y. U. S. 2,364,307, Dec. 5. A collapsible tube having an externally threaded discharge neck closed by a threaded cap formed with an axial discharge opening adapted to be closed by a valve head mounted on the top end of a stem projecting from a spider supported across the top of said discharge neck.

Folding Handle for Containers, S. T. Howard, Jeffersonville, Ind. U. S. 2,364,073, Dec. 5. In combination with container, a handle pivotally secured to the container in spaced relationship, having an elongated eye which is disposed lengthwise in direction toward and away from handle, a link pivotally secured to the handle and having an angularly-disposed portion extending transversely through the eye and bodily slidable.

Cover for Milk Delivery Cans, J. A. Hopwood (to Hopwood Retinning Co., Inc., Jersey City, N. J.). U. S. 2,364,216, Dec. 5. In a milk delivery can comprising a cylindrical neck surmounted by an upwardly and outwardly flaring substantially frusto-conical lip a cover having a rim with consecutive portions of its length of different diameters, one of which is of such as to fit cylindrical neck.

Method of Forming Siftproof Bag Closures, R. T. Moore (to Consolidated Packaging Machinery Corp., Buffalo, N. Y.). U. S. 2,364,543, Dec. 5. In a method of closing a filled bag, the steps of folding and sharply creasing a marginal portion of the collapsed upwardly extending mouth portion upon itself along a parallel line closely adjacent to the upper edges.

Manufacture of Films, H. D. Foster & A. W. Larchar (to E. I. duPont de Nemours & Co., Wilmington, Del.). U. S. 2,364,435, Dec. 5. Apparatus for forming films by extrusion of molten polymer, said apparatus comprising rotatable drum having spaced peripheral grooves cut in the film-casting surface.

Carton, W. P. Frankenstein, Cincinnati, Ohio, U. S. 2,365,261, Dec. 19. A box with a bottom, upstanding walls from the sides of the bottom, two of said opposed walls having at opposite ends thereof connecting flaps for respective attachment to the adjacent walls on the inner or opposed surfaces thereof.

Garment Bag, R. R. Smity (to National Carbon Co., a corp. of New York). U. S. 2,365,303, Dec. 19. A garment bag frame comprising a spreader frame, a hanger bar equipped with eyelets which pivotally connect bar to said frame.

Cardboard Carton, D. F. Cunningham (to Pabst Brewing Co., Chicago, Ill.). U. S. 2,365,333, Dec. 19. A combined bottle carrier and carton comprising an outer case a bottle partition filler fitted in said case including a sliding central partition.

Prophylactic Package, F. G. Karg, Chicago, Ill. U. S. 2,365,556, Dec. 19. A package comprising a first sheet of non-metallic, thin, and water-impervious material shaped to define an intermediate liquid-tight reservoir and a pair of oppositely directed end tabs, a prophylactic sheath in said reservoir, an antiseptic substance in said reservoir to contact with said sheath and means for reinforcing one of said end tabs and providing a finger hold, having second elongated sheet of materials having an intermediate folded portion.

Device for Sealing Bags, P. G. Cook (to Union Bag & Paper Corp., New York, N. Y.). U. S. 2,365,523, Dec. 19. A device comprising a filled bag supporting table, and a pair of opposed walls forming a channel above table and adapted to receive snugly the collapsed mouth of a filled bag, and means for creasing and folding open mouth of bag.

Filling Spout, E. W. Vredenburg, Berkeley, Calif. U. S. 2,366,163, Jan. 2. In combination, a downspout, a bag filling spout, said bag filling spout comprising a first and a second member.

Dispensing Container, M. I. Williamson, New Haven, Conn. U. S. 2,366,226, Jan. 2. A container comprising a body part; tuck end-closure means hinged to a wall panel of said body part, said tuck-end-closure means including a main closure panel.

Container, B. M. Williams & F. L. Rushing (to Gaylord Container Corp., St. Louis, Mo.). U. S. 2,366,304, Jan. 2. A carton comprising a body and a cover therefor, said body having side panels with flaps that are overlapped and secured together to form two-ply end walls.

Box, R. B. Meller, Oakland, Calif. U. S. 2,366,419, Jan. 2. A corner section of a blank, adapted to be folded into a self-locking box corner.

Hand Bottle Capper, H. A. Harder, Milwaukee, Wis. U. S. 2,366,524, Jan. 2. A hand bottle capper comprising a base

having an apertured portion adapted to fit the mouth of a bottle with plunger reciprocally mounted on the base and projectible through the aperture therein, and a pair of handles attached to the plunger.

Cellular Paperboard Container, E. J. Rau (to C. W. Zumbiel Co., Norwood, Ohio). U. S. 2,366,557, Jan. 2. A card or paperboard container made of a single blank scored for folding and to subdivide the same into three panels.

Writing Paper, A Teicher (assigned half to firm of Beith Haroshet l'Matafot "Doar" Loewy & Kuehl, Tel Aviv, Palestine). U. S. 2,366,575, Jan. 2. A sheet of writing paper of oblong shape so cut that when edges which are supplied with gummed self-sticking flap at each end form envelope when properly folded.

Paperboard Container or the Like, E. J. DeHaven (to St. Joe-Mullen Container Corp., St. Joseph, Mich.). U. S. 2,366,602, Jan. 2. A paperboard container or the like comprising a sheet having one surface liquid repellent initially flat and folded up to provide a bottom and four sides each side being formed into an inner and outer lamination.

Can Punching and Sealing Device, C. T. Chamber, Santa Cruz, Calif. U. S. 2,366,438, Jan. 2. A can punching and sealing device, comprising an elongated flat base adapted to be clamped to the upper end of a can.

Weighing Apparatus, M. E. Brendel (to Streeter-Amet Co., Chicago, Ill.). U. S. 2,366,432, Jan. 2. Weighing apparatus comprising in combination a member movable to a position representing the weight of a load.

Container for Pencil Fillers, P. S. Hanton (to Scripto Mfg. Co., Atlanta, Ga.). U. S. 2,365,191, Dec. 19. A container for pencil fillers comprising a filler receiving element, means to close off the opposite ends of the filler element, including scored flap partly overlying a portion of the filler receiving element.

Process and Apparatus for Producing Pellicles, F. H. Reichel (to Sylvania Industrial Corp., Fredericksburg, Va.). U. S. 2,364,552, Dec. 5. The method of forming pellicles from viscose solutions comprising extruding said solution through an extrusion nozzle.

Method of Preparing Paper Coating Compositions and the Like, H. R. Murdock (to The Champion Paper & Fibre Co., Hamilton, Ohio). U. S. 2,365,097, Dec. 12. Process for preparing paper coating composition composed of aqueous suspension of mineral pigment and an adhesive derived from rice.

Bottleholder, H. K. Powell (to Morris Paper Mills, Chicago, Ill.). U. S. 2,364,651, Dec. 12. A holder for bottle comprising a body member and a retainer member both formed of sheet material.

Bottleholder, H. K. Powell (to Morris Paper Mills, Chicago, Ill.). U. S. 2,364,650, Dec. 12. A knocked-down container for the packaging of bottles comprising a blank of sheet material formed to provide a body section and a girth section.

Envelope, A. H. Kakanson (to U. S. Envelope Co., Springfield, Mass.). U. S. 2,364,711, Dec. 12. As a new article of manufacture, an envelope adapted for

attachment by tacks or nails to a box, case or the like, envelope being made from a one-piece blank.

Box, H. D. Tichenor (to the Wabash Fibre Box Co., Terre Haute, Ind.). U. S. 2,364,829, Dec. 12. In a box, four side walls of foldable sheet material, two opposite ones of said walls being provided respectively at their lower edges with triangle tongues folded into the co-planar relationship, and shaped to close lower end of box except for a narrow slot formed.

Package, P. O'C White (to White Cap Co., Chicago, Ill.). U. S. 2,364,678, Dec. 12. In a packing container, a receptacle having a mouth attits upper end, and an approximate cylindrical peripheral sealing surface of substantial axial extent spaced below its mouth.

Bottle Container, G. F. Richter (to Scovill Mfg. Co., Waterbury, Conn.). U. S. 2,364,753, Dec. 12. In combination, a receptacle having a reduced neck, a closure removable connected to said neck, a container for said receptacle comprising a casing having an open end and a cover having means for telescopic engagement.

Package, C. H. Rasmussen (to Ferdinand Gutmann & Co., Brooklyn, N. Y.). U. S. 2,364,916, Dec. 12. A package embodying therein a body formed of a tearable wrapping closely enveloping a stack of tablets or lozenges.

Portable Container, F. J. O'Brien (to Continental Can Co., Inc., New York, N. Y.). U. S. 2,365,099, Dec. 12. In combination with a container having side wall and top wall secured thereto, a bail type carrying means comprising two horizontally apertured ears secured to said container side wall at opposite sides.

Key Opening Container, F. J. O'Brien (to Continental Can Co., Inc., New York, N. Y.). U. S. 2,365,100, Dec. 12. A key opening container including a body portion having score lines forming a tearing strip, and a closure end secured to the container body and a key for removing the tearing strip.

Rip Strip Container, H. Schrader & B. B. Grodon (to Continental Can Co., New York, N. Y.). U. S. 2,365,112, Dec. 12. In a container, a body having a side seam formed at least in part of interlocked hooks and score lines extending about the body thereof at the position of said interlocked hoods and defining a rip strip, and a winding key receiving tongue extending from the defined rip strip.

Basket Structure, J. Gerald (to Mid-West Wire Products Co., Detroit, Mich.). U. S. 2,364,705, Dec. 12. A basket structure having an elongated form of the closed loop type and laterally spaced longitudinally extending supporting runners.

Adhesive Label, Tag, and the Like, D. F. Dreher (to Adhere Incorporated, a corp. of California). U. S. 2,364,607, Dec. 12. A tag comprising a backing sheet and a label sheet coated with adhesive which may be peeled off the backing, the label sheet having a relatively nonadhesive zone.

Gummed Sheet Material, C. W. Stillwell (to Dennison Mfg. Co., Framingham, Mass.). U. S. 2,365,020, Dec. 12. Gummed sheet material of the water-remoist-

enable type comprising a backing and on one side of the backing an exposed dry coating of water-activatable adhesive in continuous phase and a deformable resinoid filler in discontinuous phase, the ratio of adhesive to filler being approximately two to one.

Raw-State Preserving Process and Composition, J. H. Beatty, Anaheim, Calif., U. S. 2,364,614, Dec. 12. A cellulose wax gel adapted for use as a tenacious adherescent protective coat for fresh food bodies.

Wax Emulsions, J. O. Handy (to Duzzel Corporation, Dover, Del.). U. S. 2,364,632, Dec. 12. Process of preparing an emulsion for application to fruit and vegetables to enhance luster and control shrinkage and decay.

Preparation of Fresh Fruit for Market, L. W. Burwick & C. D. Cothran & T. G. Cuning (to Brodrex Co., Pomona, Calif.). U. S. 2,364,946, Dec. 12. In the preparation of fruit for market, the process of providing it with a thin waxy coating to enhance its marketability.

Container, R. R. Walton & D. G. Greenlie (one half to Container Corporation of America and half to Dewey & Almy Chemical Co.). U. S. 2,365,159, Dec. 19. A container for fluent commodities comprising in combination a liquid-tight bag of thin flexible sheet material and a carton.

Paper Bag, H. A. Wolf (assigned to partnership doing business as Wolf Bros., Philadelphia, Pa.). U. S. 2,364,886, Dec. 12. A paper carrying bag with closure flap formed by an extension of one of the walls.

Container, F. L. Brandt (to National Fireworks, Inc., a corp. of Massachusetts). U. S. 2,364,943, Dec. 12. A container comprising a hollow case having a plurality of rigid sides and an opening in one of said sides smaller in area than that of said one side.

Bottle Cap & Method for Making Same, R. Sonnenberg (to Mid-West Bottle Cap Co., Belvidere, Ill.). U. S. 2,361,507, Oct. 31. A preformed hood member for milk bottle caps comprising a sheet of thin ductile metal foil shaped to provide a mouth-spanning portion.

Cap-Feeding Apparatus, W. D. Bell (to Anchor Hocking Glass Corp., Lancaster, Ohio). U. S. 2,361,364, Oct. 31. A cap-feeding unit comprising a magazine for a stack of caps.

Method & Apparatus for Sealing Containers, W. D. Bell (to Anchor Hocking Glass Corp., Lancaster, Ohio). U. S. 2,361,365, Oct. 31. The method of sealing a cap on a container which comprises guiding a cap into position over the container and while guiding the cap into such position first passing a current of air beneath the cap and into the head space of the container to remove vapor.

Apparatus for Sealing Containers, W. D. Bell (to Anchor Hocking Glass Corp., Lancaster, Ohio). U. S. 2,361,366, Oct. 31. Apparatus for sealing caps on containers comprising a convey, a cap-feeding unit and unit for injecting live steam beneath each cap as it withdraws.

Presenting **TRAYER** Packaging



There is drama in the quick-moving development of new TRACO and LOXTITE packaging... ideas, materials, and applications. Present and post-war needs are being served while meeting war demands.

TITE-SEAL BAGS (Plain or Printed)

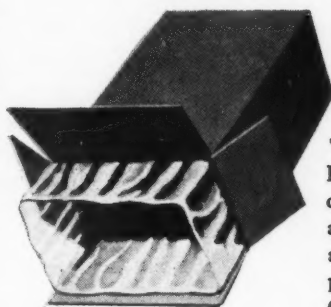
Of Cellophane and Laminated Foils

Immediately available for practically every method, grade, and type of military package. Also for packing all classes of fresh, frozen, and dehydrated food. Patented TITE-SEAL feature provides for expansion under stress without parting of seam.



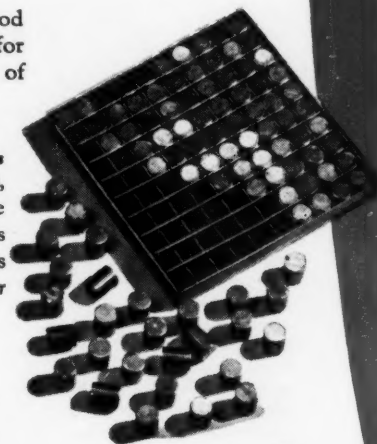
TRACO FOIL

Printed sheets, rolls, or in TITE-SEAL bags for method II military parts packaging and sometimes available for wrapping candy and foods needing a high degree of moisture vapor protection.



TRACO WRAPS *Multiprinted in Sheets or Rolls*

For bacon, butts, shoulders, etc., candy, bread, cookies, cakes, underwear, lingerie and all products seeking eye appeal, full protection and consumer preference. Materials as available: Cellophane, Glassine, Victorywrap and Foils printed in multicolors by Rotogravure, Letter Press or Colorbrite process.



VICTORYWRAP

A heat sealing moisture-proof material most satisfactory in roll printed form for use on bag-making machines. Premade plain and printed bags are perfect packages easily and tightly closed by heat sealing.



TRAVERSHEEN

High-gloss wrapper of beauty and rich color possibilities, pinch hitting for cellophane in the hosiery, knit goods and accessory fields and always popular for banding, with florists, candy box makers, etc.



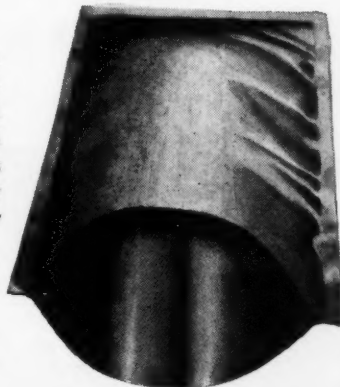
TRACO-PAK

Combination of Cellophane and grease-proof board for packaging meat products.

LOXTITE PARTITIONS

Provide crash protection for small shells, fuses, delicate instruments and war items. Will be widely used in peace time to prevent breakage and abrasions in shipping and in stock. Long popular for cookies, candies, eggs, bottled beverages. In combination with Cellophane bags or wraps, supplies the perfect package for bakery goods, candy, fresh fruit and vegetables—a new development.

Let our designers, artists and engineers help you wrestle with those knotty problems of present day and post-war packaging. Patented Automatic machines of our design insure economical and dependable production.



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Packaging Perfection

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PACKAGE

PERFECTION

In the post-war period it will not be sufficient to merely wrap and seal your packages. Unless they are attractive, sales will suffer. Greater attention to appearance details will be necessary and every phase of wrapping procedure will have to be checked to obtain maximum sales results. Check your equipment now and ascertain what your probable requirements will be. For more than thirty-five years the Hayssen Mfg. Company has been specializing in wrapping equipment. Their wrapping machines, equipped with electronic controls, give the maximum of service and can be depended upon to give you a precision-type of wrapping. Write the factory today for further information. You're under no obligation, of course.

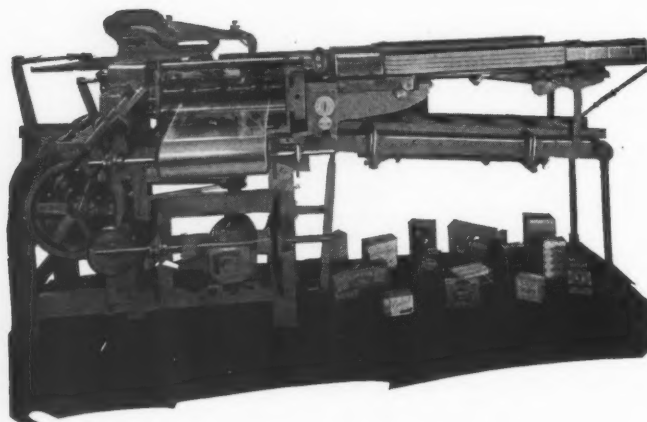
Hayssen Mfg. Company

Sheboygan, Wis.

HAYSSSEN

ELECTRONIC CONTROLLED

WRAPPING MACHINES



Packaged meats . . .

(Continued from page 84) operated self-service in eight stores until conditions forced temporary curtailment. Post-war expansion is slated.

They sell 90 different meats from the self-service case, but the case make-up varies considerably according to the clientele of the particular market. This has been found important; no standard case make-up will fit all needs.

The first case installed sold over \$2000 worth of meat a week; the average for the chain is above \$1500 per case per week. The average sales increase per store is about 20%.

On test runs this company found that 43 lbs. of cellophane, costing \$24.51, and 14 rolls of cellulose tape, costing \$8.82, would wrap \$2000 worth of meats. On service meats, labor was figured at 7 1/2% of sales and supplies at 1%; on self-service labor decreased to 4 1/2% and supplies increased to 1 1/2%—a net saving of 2 1/2%. Over-all net profit on meats for this company is normally around 1%, so the self-service gain represents a saving that will go to the consumer.

Store "E":* This large California super market is one of those which has gone 100% self-service, and "will never go back." Experience has shown the proprietor that the customer will accept a pre-packaged piece of roast, steak or any meat just as readily as a box of corn flakes—"provided, of course, that you do not try to fool her and that you give her the quality and the weight printed on the label."

Within the meat-selling space of 48 by 11 ft. there are eight self-service cases, with a 7-ft. aisle. A meat cooler 9 by 10 ft. opens into a 9-by-15 wrapping room, which in turn opens directly on the selling floor. Two meat cutters and three girls do the cutting, wrapping and servicing of the cases, and keep stocks constantly under observation.

This store sells packaged every possible cut of meat that formerly was sold on a service basis. The customer may select a two- or three-rib roast of beef, a small or large leg of lamb, all types of steaks, and cutlets of various sizes. Special requests are filled, but they are very rare.

The meat cutters approve of self-service. They cut meat all day without interference or interruption. On a typical Saturday the two meat cutters started work at 8:00 a. m. and by 3:00 p. m. had cut the following: 40 pork loins, 4 cattle, 8 lambs, 53 hams (which lasted only two hours), 500 lbs. of sliced bacon, 2 veal, 200 lbs. of wieners, 200 lbs. cold cuts, 5 doz. rabbits (cut up), 6 doz. chickens (whole), 30 pork shoulders, 40 lbs. hamburger, 100 lbs. breakfast sausage meat.

Summarizing the experience in all installations to date, it appears that the principal advantages that have been established for pre-packaging of meats are: popularity of self-service with the customer, greater profits for the store and/or lower cost to the consumer, more efficient use of valuable store space, elimination of traffic bottleneck, closer control of operating costs, increased market for slow-moving meat cuts or parts, better preservation of meats on display.

The disadvantages present no insurmountable obstacles if they are intelligently approached by store operators and the suppliers of materials and equipment, working cooperatively. The principal disadvantages cited are: relatively short "shelf life" for packaged meats, requiring close control of packaged stock in anticipation of customers' demands; some loss of stock through theft (apparently exaggerated during the present period of meat rationing); opposition by or-

* From the article "All-Self-Service Meat Departments a Post-War Certainty," *Super Market Merchandising*, Oct. 1944.

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for
Industry
and
Commerce*

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Pack your products in cartons or bags . . . store them where you must, even where humidity and heat is high . . . ship them by any carrier . . . and your carton closures will still be doing their part to protect your products when they arrive at destination.

***Silverstitching**—Acme's superior method of closing cartons and bags with strong steel staples—is used in thousands of shipping rooms in many industries because it is efficient, economical, easy to do, and thoroughly reliable.

Learn how Silverstitching can speed carton and bag production, lower packing costs and help protect your products beyond the packing line. Write today for a photo-filled folder which gives all the facts.

ACME SILVERSTITCHERS . . . the machine which does Silverstitching is a low-cost, sturdy piece of equipment, capable of long, steady runs at high speed with minimum maintenance. Its operation is so simple anyone in your plant can operate it. There is a model for every stitching job.



ACME STEEL COMPANY
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ganized labor; need for better and more economical packaging materials and equipment.

It is true that in nearly every case in which self-service has been introduced it has been looked upon with suspicion by regular meat cutters and there are a few cases in which opposition by unionized help has forced abandonment of the method. But it is significant that wherever the method has been developed on a large scale the help has become reconciled to it and apparently has benefited over the long term. It is hoped that further education and experience will demonstrate to all that the meat man does not lose his job but merely concentrates on it, instead of being half-clerk, half-butcher. Increased sales volume will keep the same number of meat cutters on the job and in addition self-service will bring into the unions a number of dues-paying girl wrappers.

Packaging suppliers may conclude that the immediate need is for materials and equipment to be used in hand operations in the individual store, but they should be planning now for mechanized packaging of meats at central points. Several standard wrapping machines now widely used in the confectionery and bakery fields will be readily adaptable to large-volume meat packaging. Such machines are adjustable to handle a wide range of meat sizes and shapes.

Machine wrapping appears to be practical, however, only in very large-volume operations, where there could be a long run of a single item. Few, if any, single stores could sustain machine operations and central packaging has several problems yet to work out in addition to the labor angle, including proper refrigerated storage and transport and sale of stock within the safe packaging period.

It is likely that machine wrapping will first be used as an adjunct to hand wrapping in the store. Meats which resist discoloration for a considerable period—such as sausage, wieners, smoked meats, luncheon meats, etc.—and which can easily be supplied in uniform, predetermined package sizes and weights, could readily be packaged and shipped from a central point within a city, while the more difficult red meats could continue to be hand-wrapped in the store.

Here are some of the immediate store needs:

Cellophane which will not discolor in direct contact with red meats for at least 48 to 72 hours, eliminating the use of trays.

Labels to go next to the meat that won't soak up blood or fade markings, or

Foolproof adhesive labels for the outside of the package that won't come off despite condensation.

An automatic dispenser to conserve cellulose sealing tape, or Elimination of sealing tape through some means of heat-sealing all types of packages.

A measuring device on roll cellophane dispensers.

A simple machine to print weight and price on label during the weighing operation.

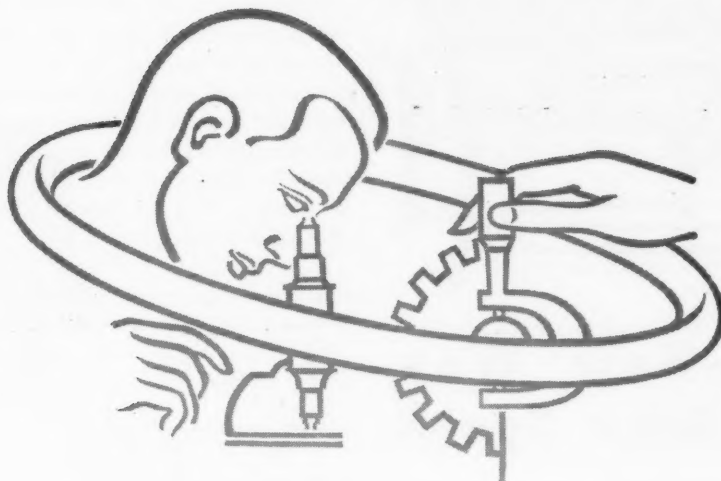
A self-service case that can be fed from the back and with storage space in bottom.

A self-service case with more than one display surface.

Glass or plastic partitions in the case to separate stacks of items and help keep them straight.

There can be no question that pre-packaging of meats is here to stay—and to grow. Perhaps the best indication of the demand for it is the fact that the practice has stubbornly held on through the war despite all the difficulties of rationing and coupons and seemingly impossible shortages of meats, materials and equipment. It represents a great future for the expansion of packaging into a comparatively unexploited field.

CREDITS: Duplex scales by Toledo Scale Co., Toledo, O. Heat-sealer by Wrap-Ade Machine Co., Inc., Newark, N. J. Wrapping machines—Fig. 17, Oliver Machinery Co., Grand Rapids, Mich.; Fig. 18, Packaging Machinery Co., Springfield, Mass.



GOLDEN ANNIVERSARY AT PNEUMATIC

IN 1945, fifty years of happily combined Engineering Service and Research will be completed at Pneumatic Scale Corporation. This combination has been a factor of first importance in the origin and development of modern packaging machinery.... Leadership in this broad field has been won and maintained by Pneumatic through the singleness of a high purpose: to design and build packaging machinery that will produce at lower and lower cost per container. The achievement of Pneumatic Packaging and Bottling

Machines is such that today the great majority of the best known products on the shelves in American homes are packaged by Pneumatic.

But Pneumatic looks upon this fifty years of research and service as merely indicating a milestone — a milestone that points clearly ahead to greater contributions to American industry and American life.

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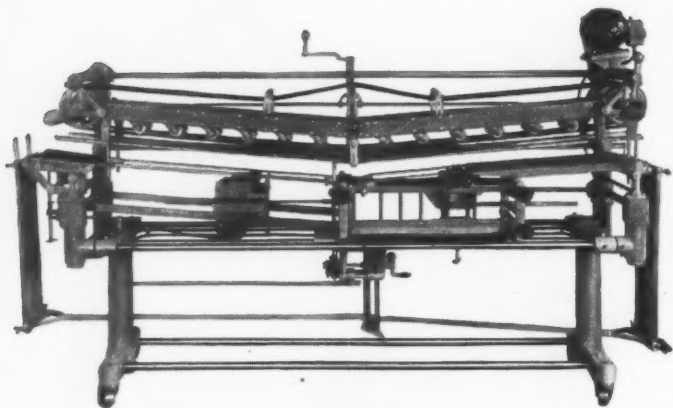
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PACKAGING & BOTTLING MACHINERY



Greater Capacity . . .

Wider Range . . .

Easier to Operate . . .



The CRCO-New Way Automatic, High Speed LABELER

Speeds up to 500 cans or jars a minute . . . range from 6 ounce to gallon tin or glass . . . a quick changeover adjustment that takes only a moment . . . trouble-free construction throughout . . . these are only a few of the outstanding features of the CRCO-New Way Labeling Machines.

Available in straight or adjustable models to handle anything that can roll, whether it's glass or tin.

Send for the new CRCO-New Way Industrial Bulletin, just off the press.

NEW WAY DIVISION

**CHISHOLM-RYDER COMPANY, INC.
HANOVER, PA.**

Hobby tools . .

(Continued from page 109) illustration of a ship model. Below are illustrations of the knives, the trademark and an actual wood chest containing the deluxe assortment.

At first the company was not so enthusiastic about this type of display, but a lithographer persuaded them it was just the thing. While the displays were being printed, in came orders for about a hundred knives from the pressmen who were printing the displays. That settled it. X-Acto was sold on this type of display. When the displays were described in the company's house organ, a thousand or more were ordered in a month and a half.

One of the reasons for the company's successful growth is its continued supply of new ideas to jobbers and dealers, through the company house organ, letters and other promotional materials. Once a jobber has been added to the list, there is not much chance of his enthusiasm lagging, because so much is done to keep dealers and consumers interested. The figures show that it pays—millions of knives in use.

CREDITS: *Folding cartons, Chopp Printing Specialties Co., New York. Wooden platform easels and wood boxes, Vermont Box Co., Bristol, Vt. X-Acto man, silk screened, X-L Signs, New York. Lithographed displays, Lutz and Scheinkman, New York.*

Cathodic protection . . .

(Continued from page 126) instruments against corrosion in tests performed, the additional use of a moisture-vapor barrier is advised, particularly for long storage of the instruments, in order to restrict the access of moisture and other corrosion-inducing atmospheric agents to the instruments.

Exposure to excessive amounts of moisture for long periods can theoretically curtail the effectiveness of the galvanic protection by oxidation of the aluminum contact surfaces. While this occurrence has not been observed in tests, even upon submersion of the wrapped instruments in both distilled and salt water and exposure to humid atmosphere of 120 deg. F. for two-week intervals, it remains, nevertheless, a possibility to be guarded against. Moisture, precipitating in the box lock, can cause corrosion on oiled surfaces during long storage.

The preparation and packaging method required by the U. S. Army Medical Department provides maximum practical protection against corrosion and does not interfere with the immediate use of the instruments at ultimate destination.

The procedure is, briefly:

- a) Cleaning.
- b) Drying.
- c) Oiling.
- d) Wrapping in fully annealed bright aluminum foil 0.0006 in. to 0.0008 in. thick. The instrument should be wrapped as tightly as possible to provide maximum contact.
- e) Packaging and sealing in a waterproof, moistureproof envelope formed of a laminated foil sheet. The lamination consists of an outside sheet of 60-lb. (24 by 36 by 1000) kraft paper, laminated with an asphaltic base compound to a layer of lead or aluminum foil 0.001 in. thick, thermoplastically laminated to a cellulose sheet coated with thermo-sealing compound.

FOR THAT PARTY LOOK

As a garnish for ice cream, desserts, salads and drinks, White Swan Maraschino Cherries add both eye appeal and taste appeal. They are one of life's little luxuries that make food or drinks more inviting and tempting. Firm, round and red, White Swan Maraschino Cherries are packed by the International Fruit Products Co., Cincinnati, Ohio. The closure is a Crown Screw Cap . . . the cap that gives 50% to 100% more sealing pressure because of the patented Deep Hook Thread. Crown Cork & Seal Company, Baltimore 3, Md., *World's Largest Makers of Metal Closures.*



CROWN CLOSURES



PACKAGING

NEW PLASTIC COATINGS FOR PACKAGES. WATERPROOF AND WATER REPELLENT. PROTECTION AGAINST MILDEW, ACID, DAMPNES AND RUST.

CLEAVELAND

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"The Miracle
of Plastic Coating."
Write Dept. M.P.

Pioneers in the application of Plastic Coatings to Textiles and Paper



Aircraft cameras . . .

(Continued from page 105) contained in technical order."

While Fairchild feels the tank-dip process is adequate for most small metal parts, it cannot be used for delicate assemblies containing springs, ball bearings and moving parts as directly applied preservative is difficult to remove.

The second procedure for such small parts involves extensive wrapping, first with Grade A, non-sticky, greaseproof paper and then in a snug box, which is wrapped with heavy greaseproof Grade C, an adhesive paper.

After this the boxes are double-dipped in wax and left to dry. When the wax has sufficiently dried, these packages are labeled properly and sprinkled with an odorless talcum to prevent them from sticking together in shipment.

All these packing methods are now standard, whether the shipment is for destinations 30 or 3000 miles away. Considering them worth all the trouble involved, Fairchild has received letters from all over the world saying "the equipment, packed the new way, was received at this base in absolutely perfect condition."

It is definitely certain, the company states, that favorable repercussions from such new methods of shipping will long outlive the war and will be just as applicable in peacetime.

School of packaging . .

(Continued from page 91) proof case liners are demonstrated. The Laboratory recommends the high-top type of case liner, as shown in War Department Supply Bulletin SB 38-2, rather than the double-top-pad type.

Finally, the problem of procurement of packaging materials is discussed and students are given lists of suppliers of various materials and equipment required for overseas packaging. The lists cover sources of supply of the following: solvent and alkaline cleaners, emulsifiers, cleaning equipment, corrosion preventive compounds, greaseproof and water, resistant papers, bags and envelopes, sealing compounds, silica gel, moisture-vaporproof barriers, heat-sealing equipment, waterproof barriers, water-resistant adhesives, cushioning materials, kraft paper bags, folding and setup boxes, cordage and twine, water-resistant adhesive tape, insulation compound, nailed wood boxes, wirebound boxes, cleated plywood boxes, crates, bituminous crate top-coating materials, fibreboard containers, round wire, tying tools, metal strapping, strapping tools and seals, metal cans, pails and collapsible tubes, textile shipping bags, barrels, drums.

While the current instruction and research program has been largely tied in with the overseas packaging requirements of the Army and Navy, considerable thought has been given to the postwar implications of new wartime packaging developments and requirements.

For example, much of the present V-board program probably can be adapted to peacetime use; it seems logical that a good deal of the improvement effected will be permanent and will result in better fibreboard being available.

A great deal of thought and attention has been devoted to ways and means of preventing corrosion; it is probable that any post-war export packaging program will pay much more attention to effective methods of corrosion prevention.

In shipping products by air, consideration must be given to new packaging problems posed by such factors as high altitudes, low temperatures and condensation of moisture. War-



ONE *Sure Introduction* TO POSTWAR MARKETS

When America's dollar turns again to **SELECTIVE**, peace-time buying, you will need, and want, every sales weapon at your disposal. ☆ Surely one of the best introductions for your product to this new, highly competitive market, will be a new package . . . a package alive with color and eye-appeal;

imaginatively designed and skillfully created to attain the highest degree of attention values. Milprint is ready NOW with this type of package . . . ready to give you a powerful sales weapon that will fasten the eye of the post-war consumer on your product. ☆ Consult your Milprint representative today.

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 SAN FRANCISCO • LOS ANGELES • CLEVELAND
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Angier

OF FRAMINGHAM



Airplane engine and parts manufacturers were up against it for a greaseproof wrapper to prevent corrosion. Angier of Framingham produced it in INDUWRAP, which has more than met any specification ever drawn for a Grade A, Type I wrapper.

If you have a corrosion problem, ask for samples of INDUWRAP and for descriptive folder, "The Touch of Death to Steel." You'll be especially interested in INDUWRAP'S exclusive infused Inhibitor metal-contacting surface. This kills corrosion before it starts by depositing a transfer film on the exposed metal spots, often caused by breaks in the protective oil film.

Other important features are that INDUWRAP is creped to S-T-R-E-T-C-H. It lets packaged metal breathe. It is soft and pliable, molding easily to hug odd-shaped articles snugly — without rupturing. Investigate INDUWRAP.

In writing for samples and literature, please mention IRON AGE.



ANGIER CORPORATION

CORROSION PREVENTIVE AND WATERPROOF PAPERS
FRAMINGHAM, MASSACHUSETTS

time packaging has been developed with but small thought to cost and none to consumer appeal, but postwar competition undoubtedly will act both to reduce the cost of export packaging and to make it much more attractive to the consumer.

Manufacturers and users of packaging for war work are now contacting the Forest Products Laboratory in connection with technical packaging problems. After the war, all manufacturers and users of packaging will be welcome to contact the Laboratory for advice; in cases where packaging problems are of such scope and difficulty as to warrant a cooperative research project, the work may be undertaken subject to advance agreement as to methods and cost.

Considerable thought is being given to the practicality of the Laboratory's continuing technical packaging courses for industry after the war. It is felt by many observers that any post-war packaging course could to advantage include instruction in coordinating technical and merchandising and other considerations involved in package development.

Few realize how important a part the Forest Products Laboratory has played and is playing in developing and testing packaging materials and methods, and in training packaging men. Quietly, without fuss and fanfare, it has done a great job. It is to be hoped that it will continue to function not only in its present capacity, but also as a School of Packaging.

Anesthetic ether . . .

(Continued from page 99) metically tight by a reaming tool the ether package is ready for a leak test. Each can is heated above 95 deg. F. or high enough for the liquid to become gaseous in the can. The cans are submerged in an illuminated tank of water and each is scrutinized for leakers.

Following this inspection, cans are dried with heated air. Eventually the company hopes to install infra-red dryers to eliminate some of the handling necessary in this operation.

The cans then pass through an automatic labeler which glues a paper label around the can. An automatic carton loader sets up the cartons and puts the containers into them. At this point, a cork is hopper fed into each carton. This is for the use of the physician in reclosing the container.

Squibb ether comes in 100 gram, 1/4-, 1/2- and 1-lb. containers. The smallest sizes, however, have widest usage. Since ether is not recommended for use for anesthetic purposes except immediately after the original container seal has been punctured, the smaller sizes are more economical.

The production line is flexible so that a change-over can be made from one size container to another within 2 1/2 hours.

In line with Squibb Product Control policy, tests are made on each lot during every step of manufacture. Samples of each batch bearing control numbers are kept after shipment and periodic tests of each batch are made to determine possible deterioration. Written records extending back a couple of decades are kept on file and at any time the complete history of any lot is immediately available.

In the plant office are samples of various packages of Squibb ether that have been in use since the opening of the plant. Each time there is a change in manufacture or package, one of the old packages is kept in this file. Each one of these packages represents some small improvement in the continuing search for accuracy in drug manufacture started so many years ago by the founder of this company.

CREDITS: Filler, U. S. Bottlers Machinery Co., Chicago, Ill.; labeler Burt Machine Co., Baltimore, Md.; cartoner, R. A. Jones Co., Covington, Ky.



OVERHEAD!

OVERHEAD? That word went out at Pearl Harbor. Nowadays, folks talk about priorities, taxes and winning the war. Overhead—is a peace time word anyhow. Today, the big presses and all the machinery in the Heekin factories are all-out for war. But, with the coming of peace, will come peace time problems of package designing and colors . . . metal packages that are round or square, tubular or oval. Heekin lithography on metal is famous . . . carrying many essential war time packages to the boys in the service . . . from bullets to bombs. When victory is achieved, Heekin metal lithographed containers will again carry peace time merchandise to market. When that time comes, remember Heekin has the facilities to produce whatever quantity you may desire.

THE HEEKIN CAN COMPANY, CINCINNATI, OHIO.

HEEKIN CANS

Lithographed

WITH HARMONIZED COLORS



Post-war packaging must do double duty for you. It must protect your product and it should display it to advantage.



LUSTEROID vials and tubes meet these essential requirements and give you other benefits, too.

- Crystal-clear walls for merchandising display.
- Feather-light, yet strong, rigid, unbreakable.
- All colors of the rainbow... clear or opaque.
- Printability to save labeling cost.
- Lower shipping costs through light weight and elimination of protective packing or partitioning.
- Diameters $\frac{1}{4}$ " to $1\frac{1}{4}$ " and lengths up to 6".
- Cork, slip-on or screw-cap closures.

Find out today how LUSTEROID can help solve your post-war packaging problem.

LUSTEROID CONTAINER CO., INC.

Formerly Lusteroid Division of Sillcocks-Miller Company

Office and Factory

10 W. PARKER AVENUE, MAPLEWOOD, N. J.
MAILING ADDRESS: SOUTH ORANGE, N. J.

Seeing Music . . .

(Continued from page 122) in color photography. The Russian illustrator Artzybasheff did the portrait of Sergei Rachmaninoff which adorns the romantic Russian's last major opus, "The Concerto No. 4 in G Minor." Most of Columbia's stylized drawings have come from their art director, Alex Steinweiss, now in the U. S. Navy. Decca albums have been designed by Walt Disney, William Steig, Russell Patterson, Thomas Beaton and others.

Designs for the classical albums do not attempt directly to illustrate the music, but merely suggest the composer, his time, or the general character of the recording. This is partly due to the fact that so much of the music, if you except operatic selections, is not program music, but absolute sound, on which one man's interpretation is as good as another.

Considerable emphasis is being placed on albums for children's records, and these are designed in keeping with the age groups to which they are to appeal. Victor, which won an All-America Package Competition Award in 1942 for children's record albums, has recently launched an elaborate new packaging program for children. Illustrators have been selected from leaders in the children's book publishing field and the albums are profusely illustrated both inside and out. Bits of text are also interspersed with nursery rhymes and songs for the very young. For older boys and girls simply worded explanations appear on the attractive new jackets.

Decca also has various series to appeal to children of different age groups as well as a number of educational in foreign languages. One of their current leaders in the dramatic group is an album of readings in French by Charles Boyer, containing passages from Voltaire, Rousseau, Danton, Hugo, Clemenceau, de Gaulle, etc. The cover design is a symbolism of democracy with the Statue of Liberty and the traditional figure of a woman wearing the costume of the French Revolutionary. It is a reproduction of a poster used by the Press Bureau, French Committee of Liberation.

Decca includes a separate descriptive booklet in each album of a convenient size to hold in your hand while you listen to the records. Sometimes this contains the lyrics to the songs, sometimes just informative data about the composition, the show or motion picture. Decca supplies the information in this form, believing that when such data are printed inside the album cover it means you have to hold the whole cover, which is bulky and unhandy.

Because the cost of the record album package is an expense and a big one to the producer of records, he would like to see a reduction in the price—perhaps new methods of making them equally sturdy and attractive, but at less cost per unit. However, the importance in increasing sales volume is such that the record industry will not stint to produce more and more attractive covers. Victor now has dressed up in illustrated albums 75% of its Red Seal stock and 20% of its popular releases. Columbia now has 25% of its catalog under illustrated wraps. Decca's output is consistently packaged in albums decorated with photographs and drawings.

If MODERN PACKAGING is late

Due to production and transportation difficulties beyond our control it is quite possible that your copy may be reaching you later than normally. If so please bear with us during this emergency period.

Upjohn

CONSTANT DISPLAY OF A VALUED TRADE NAME

UPJOHN: A respected pharmaceutical trade name, to doctor and layman alike. Man's memory is short, however; especially amid the tumult of war and the confusion of postwar adjustments. UPJOHN has been maintained in shoppers' minds, *at the point of purchase*, on a long series of restrained but dominant window displays created and produced by FORBES. NOW is the time to start planning your display and advertising material for intensified postwar selling. We can help you.



FORBES



LITHOGRAPH CO.

P. O. BOX 513 • BOSTON 2

NEW YORK

CHICAGO

CLEVELAND

ROCHESTER

Quality Set-up Boxes



Fine quality set-up boxes — not only strong, but beautiful to look at with decorated surfaces, interesting combinations of fabrics and papers, die cut interiors to hold fine products, specially made platforms—these form an important segment of Heminway production.

For your set-up box requirements — as well as your needs in the other categories of packages listed below, get in touch with

HEMINWAY CORPORATION

(formerly known as *The Waterbury Paper Box Company*)

SALES OFFICE—30 ROCKEFELLER PLAZA

NEW YORK, N. Y.

FACTORY AND MAIN OFFICE—WATERBURY, CONN.

Set-up Boxes

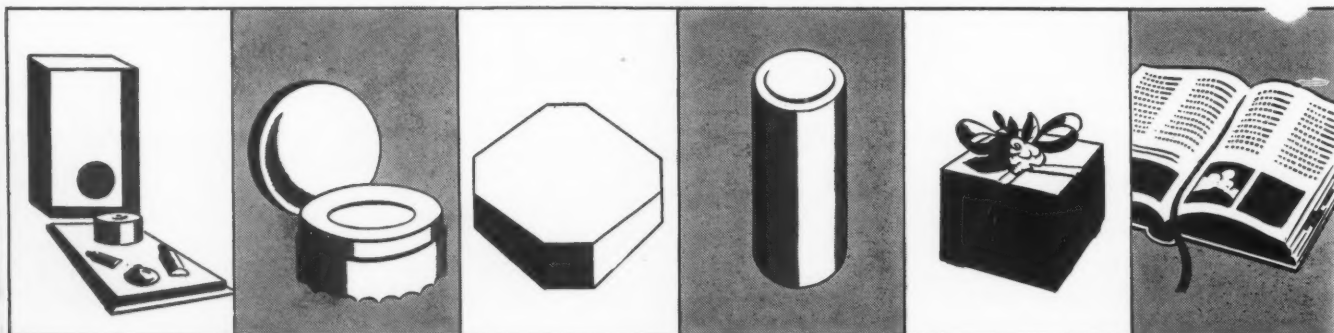
Round Boxes

Drawn Products

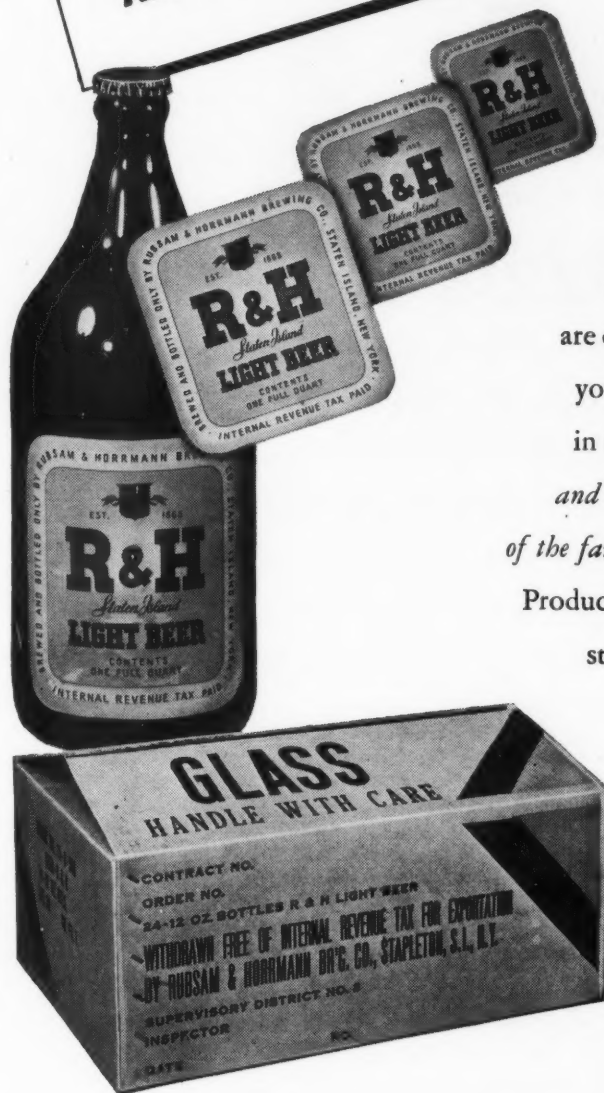
Canisters

Novelties

Printing



60 years'
experience in making
ADHESIVES THAT WORK



"PRODUCTS ARE GOOD . . . SERVICE IS REMARKABLE"

"For the past thirty-five years—and the last ten exclusively—we have been using Arabol bottle labeling adhesives. And recently your export case-sealing adhesive. We are pleased to say there are several reasons for this—two of which stand out: your products are not only good, but your service is remarkable. Whenever we are confronted with a difficult adhesives problem, you people—if you don't immediately have the answer—always find it for us in amazingly short time."—so states *William Lucaa, Vice President and General Manager of Rubsam & Horrmann Brewing Co., brewers of the famous "R & H" Beer and Ale, Staten Island, New York.*

Producing the *right* adhesive for *each specific purpose* is Arabol's constant aim. Over the past 60 years—in the service of 100 different industries—more than 10,000 adhesives formulae have been devised in the Arabol laboratories.

Whether you have a labeling, case-sealing or other adhesives problem of any kind—we invite the opportunity to show our ability to serve you. See the Arabol Representative when he calls. He knows adhesives.

THE ARABOL MANUFACTURING CO.

Executive Offices: 110 East 42nd St., New York 17, N. Y.

Offices and Factories:

BROOKLYN • CHICAGO • SAN FRANCISCO

Branches in Principal Cities



Adhesives? . . . ARABOL!
SIXTY YEARS OF PIONEERING

☆

We can still *Think* of post-war uses for DAREX WATERPROOF CEMENTS

Every pound of Darex Waterproof Cements we now make is going to the Armed Services to seal up their ration cases, food containers, ammunition boxes . . . It's so easy to use and gives such a fast-acting, flexible bond on hard-to-seal solid-fibre V-board that packers like to use it.

But, thanks to the Army, here is a product with post-war possibilities — not necessarily in its present form, but modified to meet new conditions. For example, it could be used in making laminated papers that have the honest-to-goodness flexible *waterproof bond* so demanded for shipping bags . . . Or, in making corrugated board, it could stick the flutings permanently to give a truly waterproof product . . . In the consumer field, some smart soapmaker might use it for the bottom flaps of his powdered soap boxes, to give a package whose bottom wouldn't fall out even if the box were left on damp laundry shelves . . . It might be used — well, why not let us think with you?

In developing No. 737 we've gained many clues as to how waterproof cements can be modified to suit many different uses. If you are in any part of the paper converting industry, we believe you ought to know about this new, flexible, quick-bonding waterproof adhesive and the advantages it gives. We'll be glad to swap our time with yours — we hope to our mutual benefit. When you write, please give us as many details as to your requirements as possible.



PACKAGING DIVISION

Dewey and Almy Chemical Company
Cambridge 40, Massachusetts



And we've done a lot with hot-melt thermoplastic adhesives, too. These, also, have wide post-war applications.



☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆ ☆
for

77
years ☆ ☆ ☆ ☆ ☆

SINCE 1868 ...

Again in 1945 our efforts are "all out" for victory as we continue to serve vital civilian needs and to manufacture packaging for the Armed Forces. Munitions, machine parts, clothing and numerous textiles, food, medicines and all other supplies must be packaged to reach fighting fronts all over the world. We are grateful for this privilege to share in our country's fight for Freedom.

Branches:

AUGUSTA PAPER COMPANY
Augusta, Ga.

BIBB PAPER COMPANY
Macon, Ga.

GEORGIA-ALABAMA PAPER CO.
Columbus, Ga.



Branches:

VOLUNTEER STATE PAPER & BOX CO.
Knoxville, Tenn.

NASHVILLE PAPER & BOX CO.
Nashville, Tenn.

APACO SPECIALTIES DIVISION
Atlanta, Ga.

ATLANTA PAPER COMPANY
Atlanta
Established 1868



COLOR STANDARDS SURVEYS

An Information Sheet for Printers and Designers

WHAT IS AN IPI COLOR STANDARDS SURVEY?

It is a service designed to provide printers with an instant, accurate method of ordering the correct inks to obtain exact color matches.

HOW IS IT USED?

Where packaging requirements involve printing on various types of board and paper stock, or where inks must resist chemical action of the packaged products, the Color Standards Survey takes each factor into consideration and then determines the right inks for the job.

WHAT DO YOU GET?

After the desired colors are selected by the manufacturer and the proper ink formulations have been prepared by IPI, you are furnished with complete color guides showing the right color on each type of stock with resistance characteristics to meet the conditions which will be encountered in printing and use. Each color bears a formula number and shows average coverage with limits of lightest and darkest allowable tolerances.

WHAT DO YOU DO WITH IT?

Records of the formulas are on file at every IPI branch. When you are ready to proceed with any job for which a Color Standards Survey has been made, you merely order by formula numbers from the nearest IPI branch and the correct inks are supplied immediately.

WILL IT HELP YOUR BUSINESS?

Yes! Use of the IPI Color Standards Survey saves you time formerly lost in color matching, saves you money by cutting down rejects caused by using inks not best suited for the job. Each ink is selected on the basis of the stocks upon which it will be used, thus eliminating trial-and-error methods when packaging materials are changed.

WHAT IS BACK OF IT?

IPI leadership in the use of precision control equipment for the exact measurement and analysis of color and materials, and the experience gained through years of producing highest quality inks for every use.

WHAT DOES IPI MEAN TO THE PRINTER OF PACKAGING MATERIALS?

To package, bag, carton and label printers the IPI trademark signifies leadership in inkmaking and every phase of its development. It means a complete range of faster drying inks, odorless inks, inks designed to resist soap, moisture, acids, alkalis and other chemical or physical action. It symbolizes inks unique in their special fields: Lithox*, new lithographic inks which print sharper, dry faster on metal or paper; Anilox* inks for use on aniline presses for printing, coloring or coating all grades of paper, board and other materials.

Most of all IPI means a friendly, helpful company ready at all times to serve you in every possible way.

WHAT DOES IT COST?

This service is free to any printer whose particular requirements warrant it. Not all jobs need as complete an analysis, but whatever the nature of your work we will be pleased to assist you with any problems. Write, wire or telephone your nearest INTERNATIONAL PRINTING INK representative today.

Hot Melt Coatings and Laminants, Too!

IPI, as the leader in its field, is in constant touch with packaging problems and requirements. Ask your IPI representative about moisture-resistant, grease-proof, non-aqueous hot melt coatings and laminants.

*Reg. U. S. Pat. Off.

WRITE TO THEM OFTEN BY V-MAIL. SMALL TALK TO YOU IS BIG NEWS TO THEM. KEEP IT GOING AND KEEP IT CHEERFUL



A tiny Bostitch staple
... linking war and
civilian production

Ready?

INVASION and war products *must* have right-of-way when and wherever needed...but Industry *must* be ready, when the signal changes, for a quick crossing or for open traffic...in order to carry on at full time and full speed...to furnish real jobs for those released from the services and from war plants. This requires planning—now!

If your planning involves fastening...consider Bostitching...whether your materials are plastics...metals...cloth...wood...paper...leather...or whether you are now using riveting...welding...gluing...nailing...tying. Bostitching may speed up your production...and cut your costs...as it has done in thousands of war and peace-time applications.

Investigate Bostitch...its complete line...engineering resources backed by 40 years' stapling experience...a nation-wide field force specializing exclusively on stapling. Send samples or a brief description of your fastening problem for suggestions.

Bostitch (Boston Wire Stitcher Company) 51 Duane Street, East Greenwich, R. I. (or Bostitch-Canada, Ltd., Montreal).

Bostitch Staples in most sizes are now available.

Below: One of 800 Bostitch stapling devices. Bostitch automobile-aircraft stitcher...stitches aluminum, steel, plastics, together or to other materials...300 stitches per minute.

BOSTITCH

AND FASTER
fastens it better, with wire

ALL TYPES OF STAPLES APPLIED BY MACHINES
ALL TYPES OF MACHINES FOR APPLYING STAPLES



FOR BETTER PACKAGING— AND CONTAINER SALVAGE, TOO

• Packaging engineers have utilized Bostitching for many new protective packings in this war. Among these are the packaging of huge plastic domes for noses of planes and the construction of forms over which gas masks are fastened for shipment. Special packaging for auxiliary gas tanks for planes is another development.

One of the greatest advances over a previous method of shipment is in the packaging of X-ray tubes. Whereas the difficulties of shipping these delicate tubes were so great that in World War I each tube was assigned a personal "protector" who actually carried it from the United States to France, a package has now been developed, using Bostitch fastening, which enables the tubes to be safely shipped like any other "fragile" merchandise.

The long list of munitions packages includes containers for small and medium calibre shells, data cases for bombers, grommets for protecting rotating bands on large calibre shells, and hundreds of packages adopted from the industrial field where Bostitching has long had acceptance.

Now—with containers running short—another Bostitch advantage comes to the fore—salvage and re-use.

Bostitch bottom-sealing staples, and Bostitch Autoclenc top-sealing staples can be quickly and easily removed with a screw driver, pliers, or a Bostitch staple remover with virtually no damage to the container itself. When re-used, and resealed by this method, the container retains its original strength and security.

When containers are damaged in transit, patches of corrugated board can be Bostitched to restore much of the original usefulness. One user reports that containers can be used as many as fifteen times by sealing and patching with Bostitch.

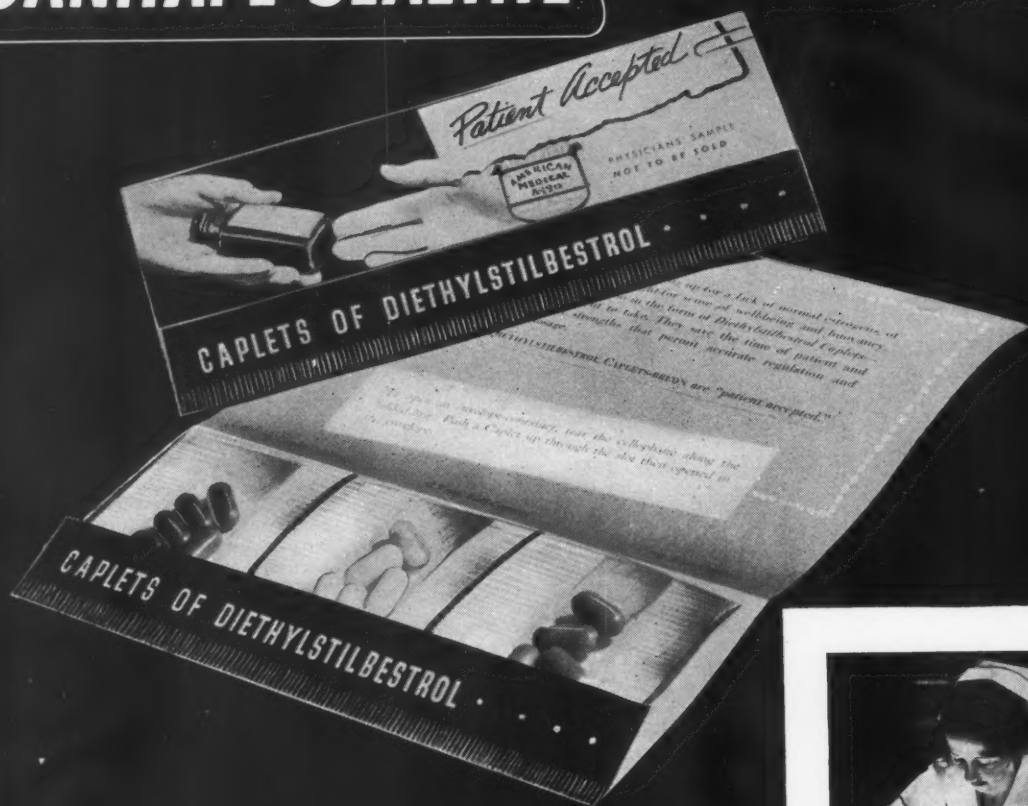
The use of the Bostitch method of stapling tops and bottoms of corrugated containers does not require the installation of large or expensive equipment. Bottoms may be stapled with foot-or-motor-operated staplers or—where large production is involved—with power driven wire stitchers. Tops may be sealed with the remarkable Bostitch Autoclenc, which applies and closes the staple entirely from the outside of the container. This light, portable hand machine can be used anywhere. It can also be employed for sealing the bottom flaps.

These machines illustrate the flexibility of the Bostitch line. There are models to suit not only the various types of work, but the nature and size of the production, as well.

To give the prospective user every possible benefit, Bostitch equipment is sold only by experienced field men who specialize exclusively in this line and have a broad familiarity with packaging and other fastening requirements.

A SANITAPE-SEALTITE

CONTRIBUTION TO PACKAGING



Ingenious Sample Package from Among A Thousand and One Unique Creations

Packaging Is A First Impression—and a vital one—in sampling, it may mean “now or never.” Sanitape-Sealtite is attractive, inviting, convenient and clean. Above is a mailing sample which shows the physician immediately that there are three strengths—shows him that each is differentiated by a different color of capsule—and includes product name and information as an inescapable part of his first impression—a definitely resultful, practical sample package. This is but one of the endless adaptations of this outstandingly successful wrapping which is definitely in a class of its own—Sanitape-Sealtite may be the answer to one of your packaging problems—we shall be glad to give you complete details.



CONTRACT PACKAGING SERVICE PRODUCT INSPECTION

Your product in our hands proceeds under the most efficient and meticulous care through various operations—from receipt in bulk to final delivery, completely wrapped and packaged. Shown above is one of our trained operators making a preliminary inspection of Sanitape wrapping. Contract packing is dependable and economical, and relieves you of endless, troublesome detail. Let us serve as your packaging department.

IVERS-LEE COMPANY

NEWARK, NEW JERSEY

PACKAGES, METHODS AND MACHINERY FULLY COVERED BY U. S. & FOREIGN PATENTS

Sanitape-Sealtite is a unique method for packaging pills, tablets, capsules, creams and powders, by which each unit or unit dose is sealed in its own air-tight compartment—assuring convenience, protection and maintained efficacy.

Reveal the **TRUE VALUE**
OF YOUR PRODUCT WITH

Sefton's

"PROFIT PACKAGING"

Sefton's pull-string opening package factory-seals your product...giving your customers *true* value! One pull of the string, and it's opened, and it can be compactly closed again. Typical of Sefton's Profit Packaging... it's a natural for your post-war products!



FIBRE CAN COMPANY
ST. LOUIS NEW ORLEANS

DISTRICT OFFICES: • Los Angeles • San Francisco • Denver • Tampa • Chicago • Des Moines • New Orleans • Boston • Detroit • Kansas City • St. Paul
Omaha • New York • Cincinnati • Cleveland • Oklahoma City • Pittsburgh • Memphis • Nashville • Dallas • Houston • Salt Lake City • Seattle

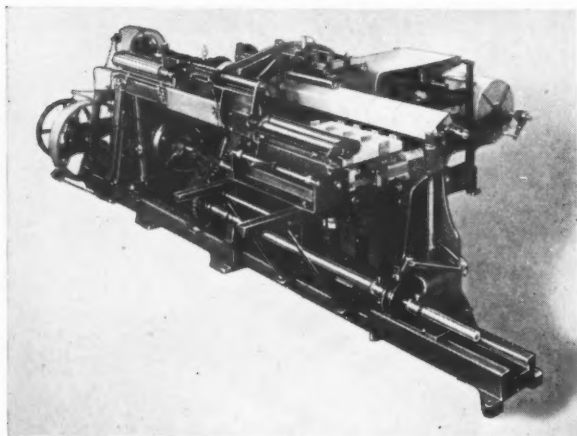
Looking for better future PACKAGE DESIGNS?



Manufacturers who are planning to create better designed packages with greater sales appeal will find that Knowlton Paper Can Machines will aid them in reaching that goal. Knowlton machines not only produce numerous types of better looking paper can bodies, but also permit easy change-overs from critical materials to paper.

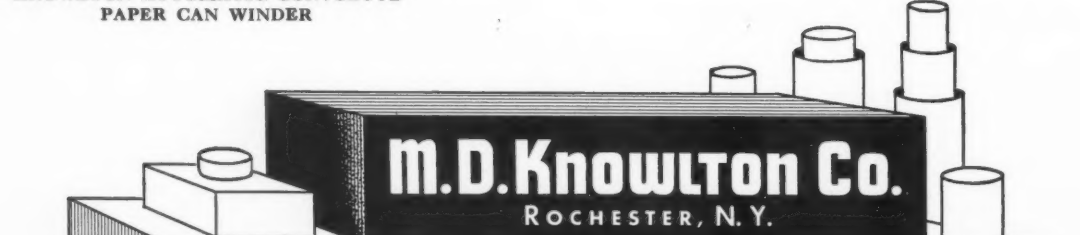
The Knowlton Automatic Paper Can Winder makes and labels 1 to 5 paper can bodies at one time, ready for either paper or metal ends.

The Knowlton Spiral Tube Winder produces low cost paper tubes, cans, and cores (2 to 21 plies) of highest quality and strength.



KNOWLTON AUTOMATIC CONVOLUTE
PAPER CAN WINDER

Write today and let
Knowlton engineers
help you with your
packaging production.

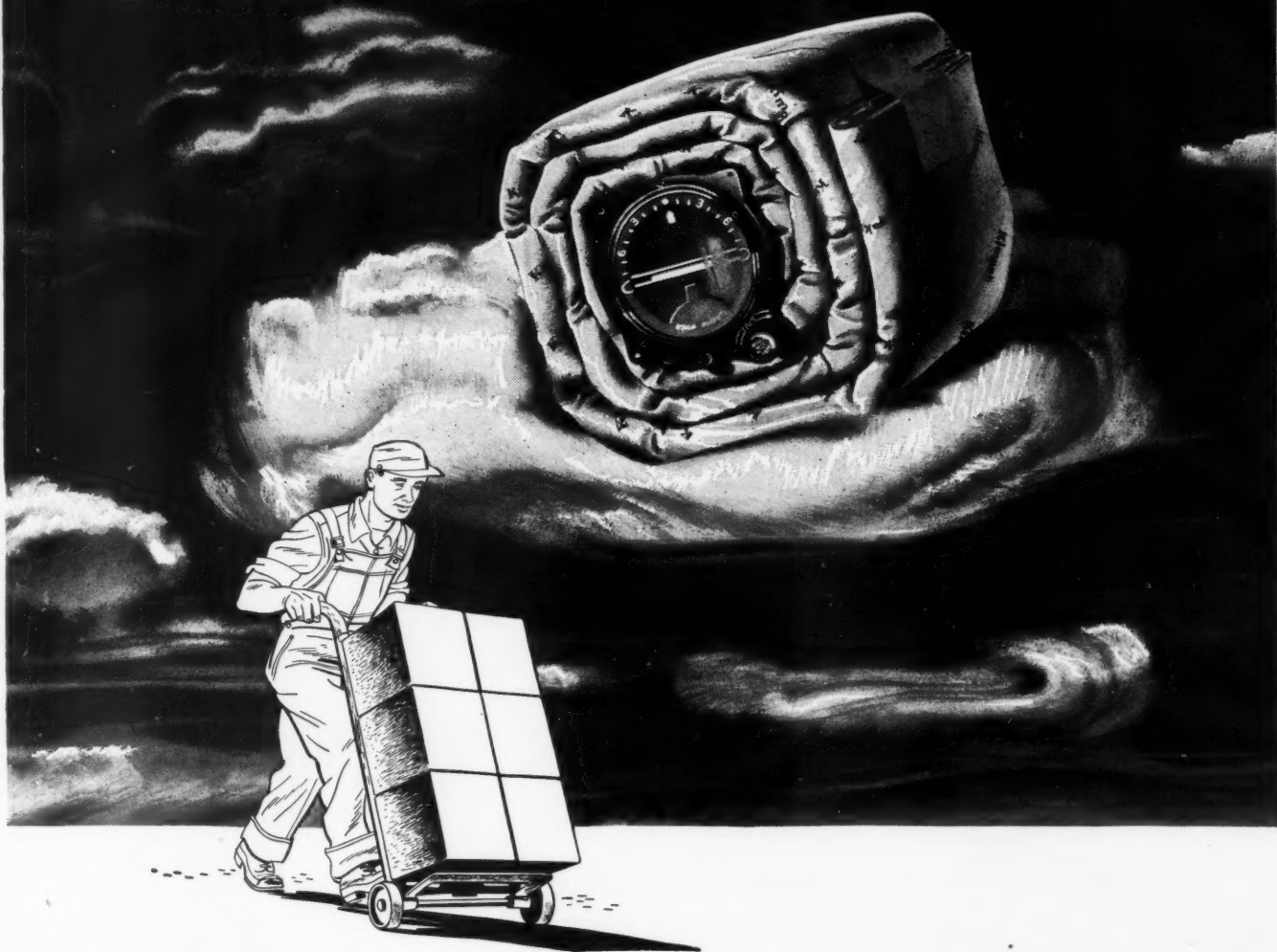


M.D. Knowlton Co.

ROCHESTER, N. Y.

BOSTON 637 Massachusetts Ave.	NEW YORK 203 Wooster St.	<i>Pacific Coast Representatives</i> H. W. BRINTNALL CO. Los Angeles, San Francisco, Seattle	CHICAGO 9. S. Clinton St.	TORONTO, CAN. 260 Richmond St., W.
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KIMPAK FLOAT PACKAGING



Increases shipping protection . . . reduces packing time

Floated on a soft, downy cushion of KIMPAK*, war materials of every kind are reaching the battle fronts in perfect fighting condition. And after victory, this modernized method of packaging will be a boon to peacetime shippers.

Because KIMPAK is so compact, so flexible, so easy to use, it speeds packaging—saves time and work in the shipping room. Often cuts freight costs by reducing package size and weight. In

this particular instance the package size was reduced 80%.

KIMPAK comes in various forms to provide positive protection for anything from refrigerators to jewelry. It will pay you to learn the whole story about this amazingly resilient cushioning material. For a free illustrated book, mail the coupon today . . . and when planning your postwar modernized package include KIMPAK for internal packaging protection.

*KIMPAK (trade-mark) means Kimberly-Clark Wadding

Kimpak

REG. U.S. PAT. OFF. & FOREIGN COUNTRIES



CREPED WADDING

FREE POSTWAR PACKAGING PLAN

In making plans for your postwar product the advice of our packaging representatives is yours for the asking. In most cases they will be able to recommend a war-proven method of float packaging with KIMPAK.

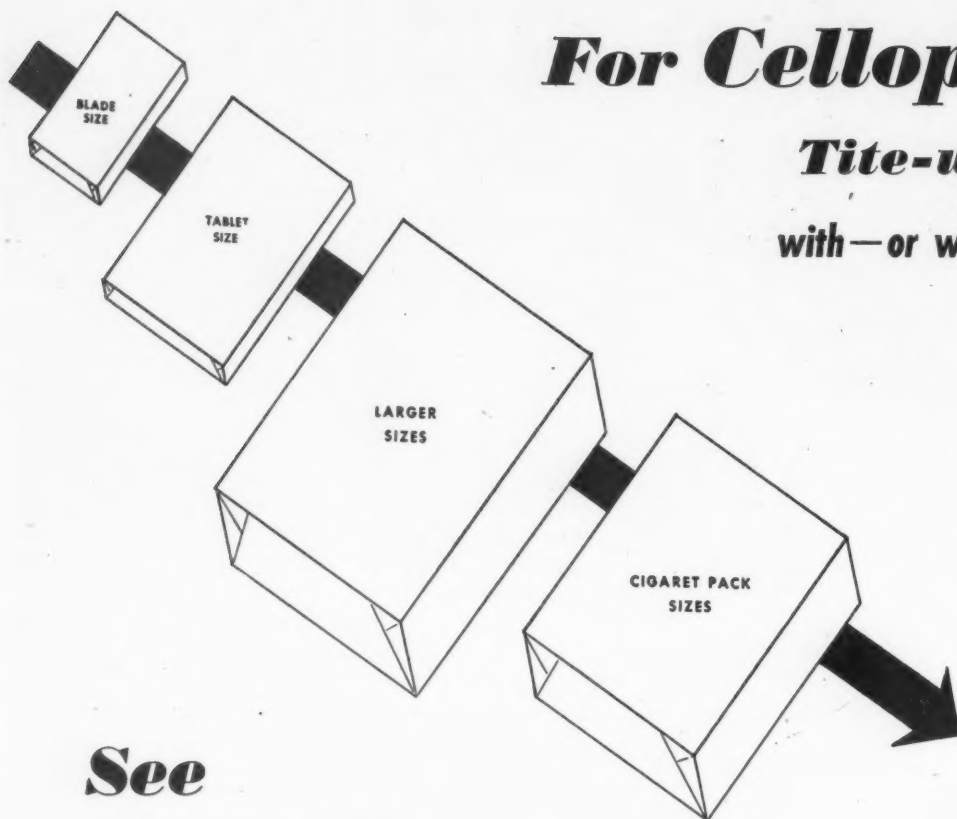
Telephone, write or wire today for the KIMPAK representative.

KIMBERLY-CLARK CORPORATION
Creped Wadding Division, Neenah, Wisconsin
Send copy of FREE KIMPAK BOOK on postwar packaging methods. MP-246

Name.....

Firm.....

Address.....



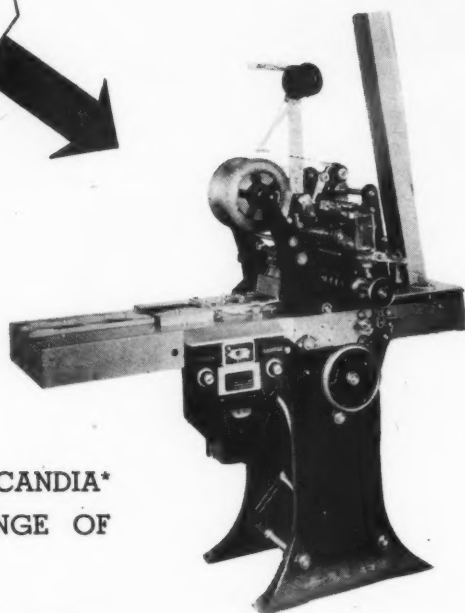
For Cellophane

Tite-wraps . . .

with—or without TEAR-STRIPS—

**UP TO
350
per minute!**

**See
Scandia—
before you decide . . .**



**If YOU Have
A "Packaging Problem"**
For 26 years we have been
instrumental in designing
and supplying Special Per-
formance machines to meet
and overcome excessive
production cost, or achieve
stepped-up capacity. Call
Scandia—for proof and for
discussion.

THERE IS A STANDARD SCANDIA*
UNIT FOR A WIDE RANGE OF
PRODUCTS . . .

ANYTHING that needs the protection
of tight, cellophane wrapping, or the
product-prestige of transparent mois-
ture-proof cellophane . . . if produced in volume, can be
wrapped the snug, secure *Scandia* way. Machines for this
type of work are widely used. *Inquire about them, NOW!*

Or course—we are still doing vital War Work, but it isn't too
early to get data for post-war packaging problems . . .

* Manufactured under Bronander Patents.

Ask for details! Our Packaging Engineers are at your service.

Scandia MANUFACTURING CO.

NORTH ARLINGTON

NEW JERSEY



Marvellum is designing NOW – what the packaging industry will need most after the war

Not until the urgent demand for war material has been fully met, can the new packaging papers now being developed by our Creative and Manufacturing Departments be revealed. Needless to say they will pioneer a new era in design, color and materials, with greater "Buy Appeal" than ever before. MARVELLUM again will lead the way.

BUT IN THE MEANTIME we have available many attractive designs that can be shipped promptly. Others are in the process of manufacturing and should be ready soon. Let us know your requirements and chances are we can give you fairly good service.

PAPERS DISTINCTIVE

THE *Marvellum* COMPANY
H O L Y O K E

M A S S A C H U S E T T S

CIRCULATION*

VERSUS

DISTRIBUTION

*Modern Plastics Magazine, as the only audited circulation publication in the plastics field, republishes this advertisement as a guidance for all advertisers.

● Circulation is readership.

Distribution is an uninvited guest.

Circulation is bought and paid for—by the reader.

Distribution is bought and paid for—by the publisher.

Distribution is artificial circulation—a selection of names which satisfies the publisher's mental vision of what a circulation list should look like.

In circulation, the reader selects the publication. In distribution, the publisher selects a list of names he hopes will be readers.

MODERN PLASTICS' circulation has been built up over 21 years of service to the plastic industry. Numerically it means that 10,734 hard-headed businessmen have decided they need MODERN PLASTICS enough to pay \$5.00 a year for it.

MODERN PLASTICS is known by its readers (and the 3,000 more who have paid to be readers even though subscriptions are not available) as the authoritative fountain-head of facts and information about plastics. Its extra-curricular activities for the plastics industry in public relations, motion pictures, News and Washington Bulletins and others have served to anchor and solidify its position.

*Actually there is no comparison because —
distribution is lifeless —
a postage stamp, a mailing sack, a waste-basket.
CIRCULATION IS ALIVE — IT BREATHES, BUILDS
AND BUYS.*

MODERN PLASTICS MAGAZINE

MEMBER AUDIT BUREAU OF CIRCULATIONS 

... the only ABC plastics paper
... the authority on the subject
... the established institution in its field
... one of America's great industrial publications!



PUBLISHED BY MODERN PLASTICS, INC.
122 EAST 42nd STREET, NEW YORK 17, N. Y.
Chicago • Washington • Cleveland • Los Angeles

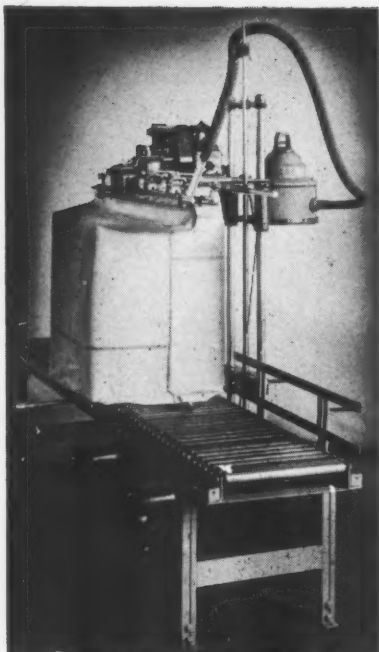


ESTABLISHED 1876



We are the *original* manufacturers for the U. S. Army, of the METAL presentation boxes for the Purple Heart, the Bronze Star Medal and the Distinguished Flying Cross. Although we are busy now on war commitments, we are making plans to be ready soon after Victory with a new line of unusual boxes designed for the postwar world.

F. H. NOBLE & COMPANY 559 West 59th Street Chicago 21, Illinois



NEW HEAT SEALER WITH PUSH BUTTON SIZE ADJUSTMENT

makes the AMSCO HI-SPEED ROTARY HEAT SEALER particularly adaptable to ordnance, aircraft and other parts-packaging plants.

Instantaneous automatic adjustment from one size to another insures high speed production on limited runs. Just push a button to raise or lower unit.

Now operating in many ordnance plants throughout the country, the AMSCO machine gives an extra margin of speed, converting former slow operation and bottleneck to the fastest part of the production line.

Engineering Details: Portable with extremely large range. 450 linear inches of perfect moistureproof heat-seal per minute—faster than other operations on packaging lines, easy operation reduces operator fatigue; air extraction from package before sealing helps avoid oxidation. Maximum production with a minimum of space and labor.

Our engineers will be glad to give you complete details.

AMSCO PACKAGING MACHINERY, INC.

31-31 Forty-Eighth Ave. Stillwell 4-4840

Long Island City 1, New York

AMSCO Machines Package:

explosives
sulfa drugs
emergency
rations
fruit bars
cocoa
salt and sugar
dehydrated
foods

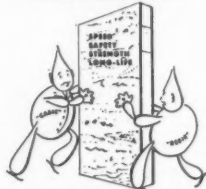
tank and truck
parts
batteries
tobacco
blood plasma
photo supplies
rivets and small
assemblies
candy

APPROVED *Case Sealing* ADHESIVE

★ NATIONAL CASEIN'S Urea Formaldehyde Cold Setting Adhesive adheres to all types of V Board, and assures a permanent, waterproof seal that stands up under rain, hail, sleet—radical and sudden temperature changes—and rough handling.

Uniformly high in quality, readily available, backed by 30 years of service to industry, NATIONAL CASEIN'S Urea Formaldehyde is Laboratory Approved as a water-resistant adhesive for sealing fibreboard boxes.

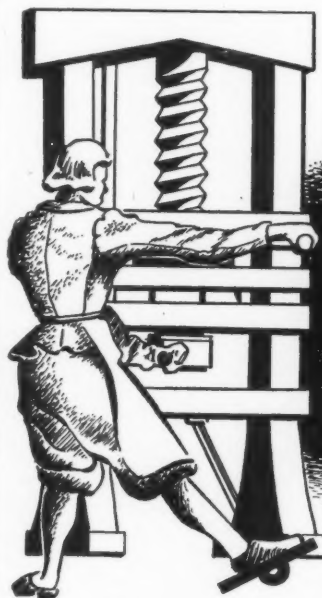
SUBMIT YOUR
ADHESIVE PROBLEMS
WITHOUT OBLIGATION



ALL TYPES CASEIN—
HOT OR COLD RESIN GLUES

NATIONAL CASEIN SALES

608-618 West 80th Street • Chicago 20, Illinois



PRINTING PRESSES for INDUSTRY

★ ANILINE and Rotogravure equipment for any and all industrial requirements. Any width—any number of colors. • Designed to meet the peculiar needs of converters of paper, cellophane, glassines, and light weight boards. • With sheetor if required.

HUDSON-SHARP

MACHINE CO • GREEN BAY • WIS

*The
First
Step*



**PLAN TO MAKE IT OF
MAC SIM BAR
QUALITY BOXBOARD**

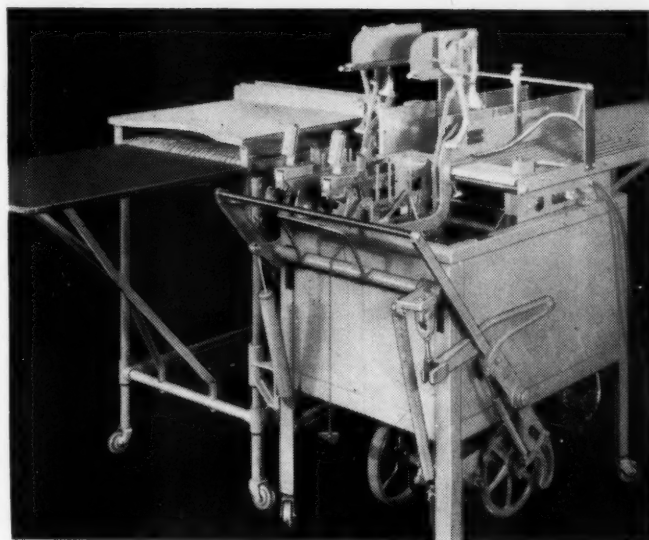
In designing post-war containers, remember this . . . there is no substitute for 38 years experience in making fine board.



OTSEGO, MICHIGAN PHONE KALAMAZOO 5500
CHICAGO, 228 N. LaSALLE PHONE CENTRAL 1798

Miller

MODEL M P S WRAPPING MACHINE



WRAPS many sizes, cuts its own wrappers from rolls. Quickly adjustable without tools. Standard Model heat seals. Can also be furnished to glue seal. Mounted on casters, the Miller Model MPS can be rolled to the job. Plugs into a light socket for power.

Send us samples of your filled packages for information on a complete bag making, filling, and sealing line.

If You Pack in Bags MILLER Offers . . .

● **SIMPLEX HIGH SPEED BAG MAKER**

Makes 2500 to 4000 perfect bags per hour.

● **HOLM FILLING MACHINE**

Automatically fills, by weight, 18 to 20 bags or cartons per minute.

● **AMSCO ROTARY BAG SEALER**

Seals up to 75 bags per minute automatically.

MACHINES FOR: WRAPPING, BAG MAKING, BAG AND CARTON FILLING, BAG CRIMPING OR CLOSING, GLUING AND SHEETING, SANDWICH MAKING.



14 SOUTH CLINTON STREET, CHICAGO 6, ILLINOIS

USE
**HEAT
SEAL**

Identify

YOUR FOOD PRODUCTS

the Modern Way

**FOOD
LABEL**

the paper that will identify
your food products

This new food products label paper has been developed as a result of government instructions to packers to place bands on frankfurters, sausages and other prepared meats in conformity with Pure Food Laws. Odorless—therefore particularly adapted for labeling food.

EASILY ATTACHED . . . heat sealing

Temperature for proper sealing depends upon length of time of contact with heating element and amount of pressure applied, but 225°-250° F. appears to be satisfactory on most equipment. Sticks to moisture-proof heat sealing cellophane at 225°-250° F. Send for additional test samples.

**COMPLIES WITH ALL
GOVERNMENT REGULATIONS**



McLAURIN-JONES COMPANY

496 MacLaurin St.

BROOKFIELD, MASSACHUSETTS

**2 fast-selling
packages**



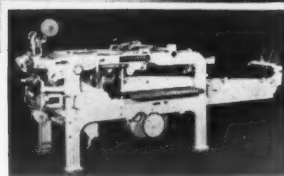
wrapped for
maximum display value
maximum protection
maximum efficiency

Here are two smart companion packages of delicate wafers wrapped in cellophane, and adequately protected against moisture and rough handling. To each package is automatically heat-sealed a colorful diecut label carrying a special message. Make a complete change of size and label from one package to the other in two or three minutes.

This new "Oliver" way of packaging and wrapping is the simple, low-cost way. A 12-ft. conveyor facilitates the assembly of products and containers to keep machine loaded. The "Oliver" conserves materials, cuts labor costs, speeds production.

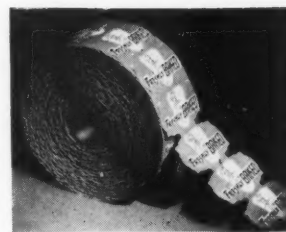
Write for details

OLIVER MACHINERY COMPANY • GRAND RAPIDS, MICH.



"Oliver" Automatic Wrapper

Wraps cakes, fresh vegetables and fruits, frozen foods, textiles, etc.—in cartons, trays, U-boards, flat cards—in any heat-sealing wrapper. Automatic Cardboard Folder and Feeder. Handles widest range of sizes. Quickly adjusted without change of parts. A girl can operate the "Oliver."



Roll-Type Thermoplastic Labels

are coded and heat-sealed to the wrapper with the "Oliver" Automatic Labeller. Rolls of colorful diecut labels are low in cost, easy to handle. Labeller can be attached to other types of wrapping machines.

"OLIVER"

AUTOMATIC VARIETY WRAPPING MACHINE

STENCILED SHIPMENTS

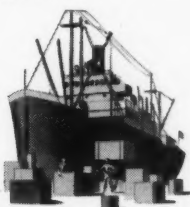
INSURE FAST HANDLING

STENCIL MARK YOUR SHIPMENTS

CLEAR, EASILY READ, PERMANENT STENCILED ADDRESSED SHIPMENTS move through the Shipping Room faster and are speeded all along in transit.

THESE NEW DIAGRAPH-BRADLEY FOUNTAIN STENCIL BRUSHES... each represent major advancements in stencil brush design and efficiency... featuring: STURDY ALUMINUM CONSTRUCTION • LIGHT WEIGHT • LARGE FENDER GUARD to prevent ink on bristles getting on table, clothing, etc. • LARGE INK CAPACITY • ALWAYS READY FOR USE. THE PENACTION FEED* operates like a fountain pen • THE SIDE BUTTON STREAMLINER* is controlled by a diaphragm valve • CAN'T LEAK.

*Pat. App. For



FOR SPEEDING SHIPMENTS USE

- D-B INKS
 - D-B STENCIL BOARDS
 - D-B FOUNTAIN STENCIL BRUSHES
 - D-B FOUNTAIN MARKING PENCILS
 - D-B STENCIL CUTTING MACHINES
- COMPLETE SHIPPING ROOM SUPPLIES



Railroads and Truckers now recommend STENCILING. See: Revised Marking Rule No. 6 revised to include the following "Each package must be stenciled or otherwise plainly marked."

DIAGRAPH-BRADLEY
STENCIL MACHINES
NO. 84 DIAGRAPH-BRADLEY BUILDING
ST. LOUIS 8, MISSOURI
Distributors in Principal Cities
See Your Telephone Directory—Classified Section Under STENCIL CUTTING MACHINES

WORLD'S OLDEST AND LARGEST MANUFACTURERS OF STENCIL CUTTING MACHINES



Sealight

THE ORIGINAL BAG HEAT SEALING MACHINE

MORE ECONOMICAL BECAUSE: it requires no pins, staples or other supplies. It gives a permanent, positive seal merely by application of pressure and heat. Uses only 150 watts of electricity.

MORE EFFICIENT BECAUSE: Kick-Leg foot lever exerts 10 times as much pressure at jaws as applied by foot. Top jaw is floated on springs that prevent undue wear on jaws and enable the operator to apply proper pressure with a minimum of effort. Positive thermostatic control assures correct temperature. Send your bag for us to seal.

IN STOCK FOR IMMEDIATE SHIPMENT

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S. Curtis & Son, Inc.

MAIN OFFICE AND FACTORY:
SANDY HOOK, CONN.
Telephone: Newtown 93



WITH the dawn of the New Year, we entered the century of the founding of our business by Samuel Curtis, great-grandfather of the present members of the firm. Through four wars and six major depressions we have continued to function since, on the original site of the first factory, always with descendants of the founder actively engaged. This is a test of STABILITY and efficiency seldom equalled in the annals of business, our credential of understanding service, and ability to produce Boxes of Standard Quality.

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Adhesives are usually the smallest item of expense in any package. Yet most containers stand or fall on their adhesives.

Bingham specializes in producing reliable adhesives for the most specialized packaging purposes. Many of America's leading packages are glued with BINGHAM products.

Send for free booklets, samples without obligation.



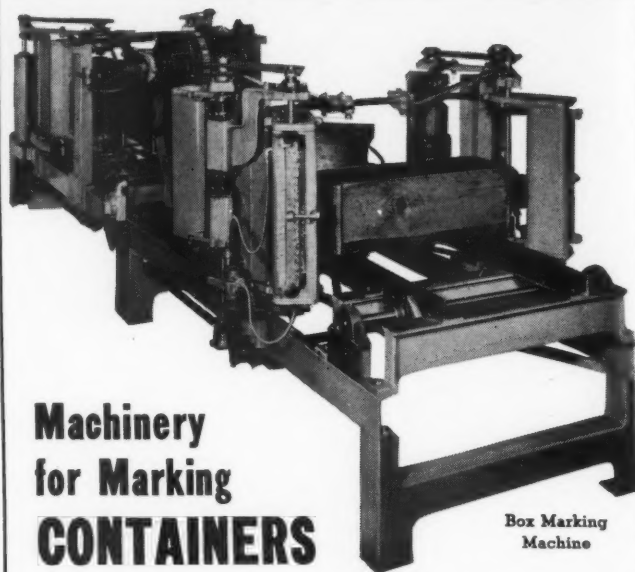
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Since 1826

EVERY KIND OF ROLLER AND ADHESIVE

Main Offices: 406 Pearl Street, New York 7

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Machinery for Marking CONTAINERS

Box Marking
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When *marking* is made an integral part of production, Superior machinery can be made to "fit in" with the production line.

Machine illustrated prints sides, ends and top of set-up boxes with any amount of wording or design desired—in any color.

Other Superior machines are in use for marking cans, bottles, jars, vials, etc.

To insure proper performance, we make the machine, the ink, and the rubber printing dies to fit the specific job. Write us.

THE SUPERIOR TYPE COMPANY

Marking Engineers

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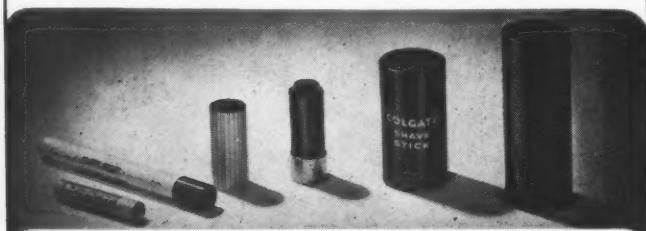
MANUFACTURERS OF PAPER TUBE CONTAINERS

FUNCTIONAL PACKAGES

for

War and Post War

The engineering experiences of war have developed smart new packages for post-war times.



attractive • weight-saving

Our long experience in the fiber tube industry has given us the "Know-how" to interpret post-war containers. Consult us on your packaging problems.

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MANUFACTURERS OF PRECISION PAPER TUBE PRODUCTS

**THE ANSWER TO THE
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In "RED STREAK" Sealing Tapes you find a combination of good paper, good glue and plenty of it—that's the real answer to any sealing problem.

Ask your jobber for
details, samples,
prices.



**"Red
SEALING**

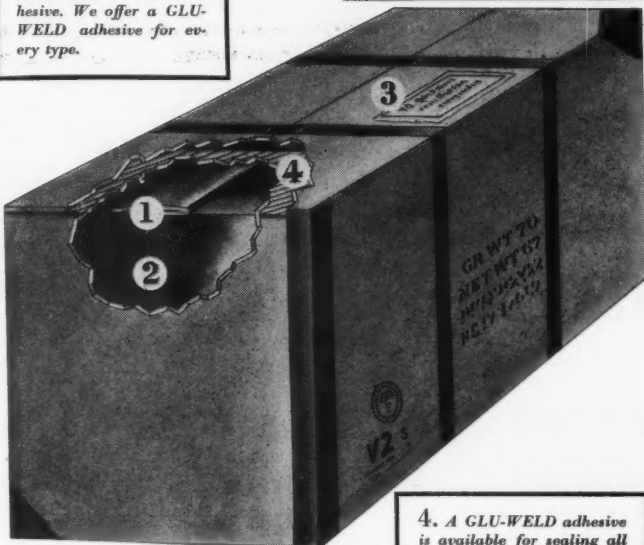
**Streak"
TAPES**

BROWN-BRIDGE MILLS, Inc., Troy, Ohio

WHAT IS THE CORRECT PACKAGE FOR OVERSEAS SHIPMENT?

1-2. The Army and Navy insist on sealing all seams and closures on waterproof bag liners with water-resistant adhesive. We offer a GLU-WELD adhesive for every type.

3. When specifications call for the attaching and overcoating of labels on fibreboard with a waterproof lacquer we recommend our C-303 GLU-SHIELD.



4. A GLU-WELD adhesive is available for sealing all types of V Board cases.

OUR DEFINITION

Our Definition:

A package which is correct for overseas shipment of war materiel is one to which has been applied principles of common sense; one which, in all possible cases, exceeds rather than shades the requirements of the specifications involved; one in which equal attention has been given to exterior and interior containers, blocking and bracing, corrosion prevention, and permanent marking; one in which a shipper takes pride in his assurance that despite rough handling, outdoor storage at the ends of the earth and transportation of all types, his product will be READY FOR WAR.

GLU-WELD WATER RESISTANT ADHESIVES—TRANSPARENT FILM ADHESIVES

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Quality Adhesives Since 1866

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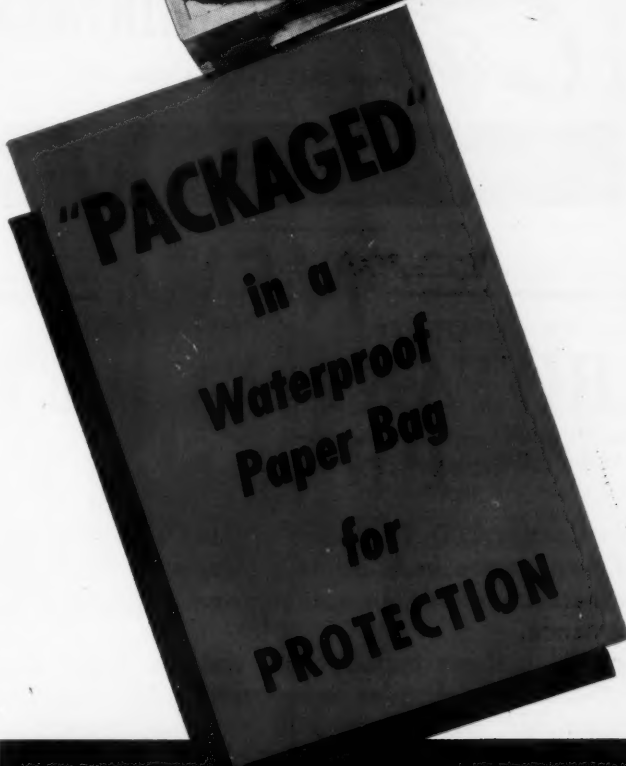
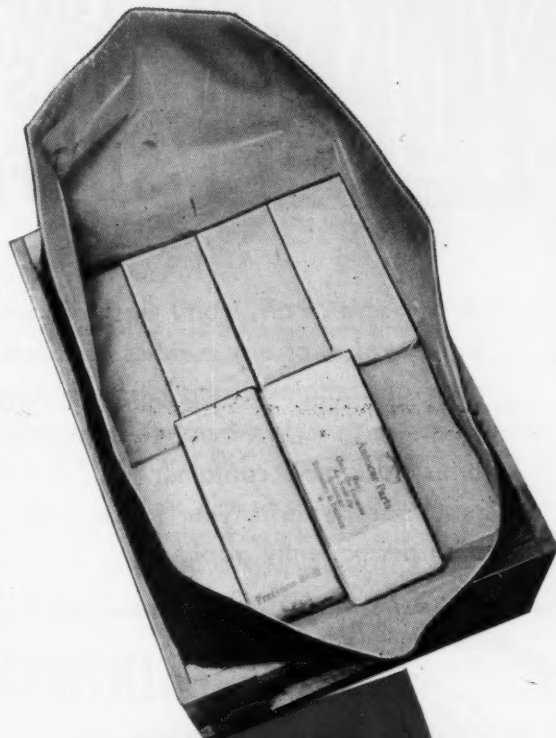


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CASE, BAG AND CARTON SEALING GLUES—LABELLING ADHESIVES

GLU-WELD AND GLU-SHIELD AVAILABLE
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THE F. G. FINDLEY CO., MILWAUKEE, WIS.



WATERPROOF LINERS AND BAGS

C.T.C.

INDUSTRIES, INC.

FRONT AND BECKETT STS., CAMDEN, N. J.

NOW!

YOU CAN DECORATE GLASS, PLASTICS, WOOD OR OTHER SURFACES PERMANENTLY!

Won't scratch off, won't wash off, won't rub off. Applied in any color, or any number of colors, to all shapes and sizes of containers and closures. Ideal for plastics and glass — also other hard-to-decorate materials. Transforms stock mold containers and closures into individualized packages with your trade mark or name or decoration permanently applied.

Creative

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Surface Decorators for the Packaging Field



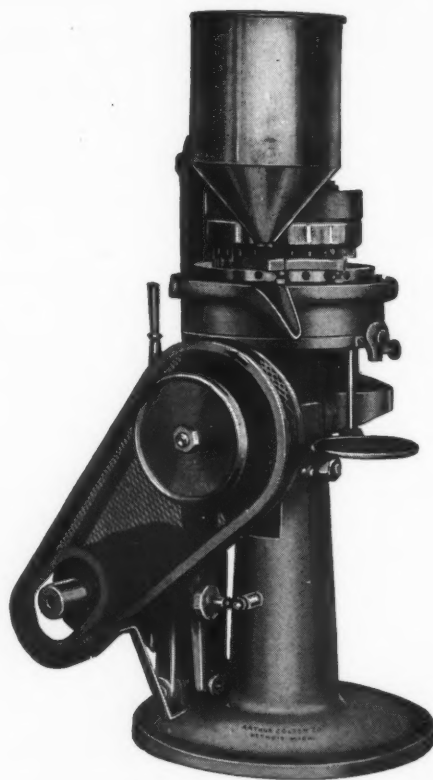
NEW ROTARY TABLET PRESS

New series 200-25 tablet machine embodies years of experience in building equipment, incorporates refinements giving an entirely new standard of performance.

Special features include new variable lower punch pull-down track plus micrometer cell adjustment minimizing punch and die wear and practically eliminating capping; solid steel tie bar; centrally located main drive shaft; lower center of gravity. Range of operating speeds is provided by built-in variable speed drive. Power transmitted through lever operated disk clutch. Special drive materially reduces power consumption. Standard speed motor. Capacity per minute: 300-800 tablets. Diameter of tablet 3/16" to 5/8", maximum depth of cell: 11/16". Floor space: 30" X 36", height: 60", net weight: 1025 lbs.

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2602 E. JEFFERSON AVE., DETROIT 7, MICHIGAN



*When Eye-Appeal
Means Sales-Appeal*

Insist On

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**BOX and SPECIALTY
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*That Add Distinction To
Quality Merchandise*

Your product looks better — sells better — when set off by a Lanova box or specialty paper.

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- Embossed
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Large varied stocks maintained for immediate delivery. Write for sample sheets and books — on your letter-head, please.

Consult without obligation our staff of packaging-design experts — at your service always!

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PAPER CO.**

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GUMMING • STRAIGHT CUTTING • FINISHING • EM
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*- Finishing -
it's the Finish that counts!*

In packaging, the finish is important, too! Beautiful colors and designs need the extra sparkle of a good coating, the extra distinction of embossing or die-cutting.

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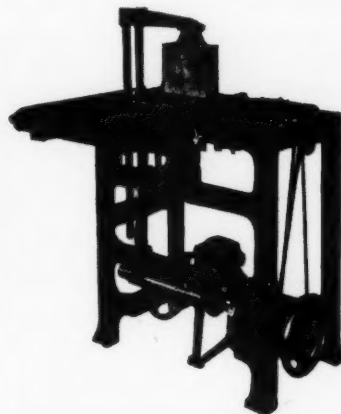
Change Your Post-war Dreams to Working Plans

Do you ever close your eyes in the thick of today's worry and dream how all the personnel and man-power troubles will disappear from your packaging department after the war?

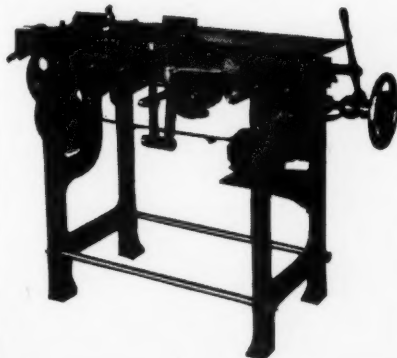
There is an easy way to make such dreams come true. Just convert them now to actual plans for the elimination of the present costly method of setting up and closing your cartons by hand!

Perhaps you are working right now on plans to reduce costs to meet your post-war competition. If so, the best time to bring PETERS into the picture is while your plans are still fluid. Then we can advise you on points of arrangement, dimensions, carton structure, etc. For many years we have been working with production planners to help them solve their production and manpower problems. The result has been lower packaging cost and greater overall profit.

Today all of PETERS experience is available to you in the solution of your problem. A sample of each size carton sent with your inquiry will bring specific recommendations for your plant. Action now will assure early post-war delivery, as we expect to fill orders in the same sequence as received.



This PETERS JUNIOR CARTON FORMING AND LINING MACHINE sets up 35-40 "Peters Style" cartons per minute and requires only one operator. After the cartons are set up they drop onto the conveyor belt where they are carried to be filled. Can be made adjustable to set up several size cartons.



This PETERS JUNIOR CARTON FOLDING AND CLOSING MACHINE closes 35-40 "Peters Style" cartons per minute and requires no operator. After being filled, the cartons enter this machine as open, filled cartons and leave machine completely closed, ready to be packed for shipment or wrapped. Can also be made adjustable to close several size cartons.

PETERS MACHINERY COMPANY

GENERAL OFFICE AND FACTORY

4700 RAVENSWOOD AVENUE, CHICAGO, ILL.

A Powder Filler FOR YOUR WARTIME NEEDS



This modern stream-lined Consolidated Powder Filler meets every requirement of wartime packaging. It is designed for high-speed filling of spice, powdered and pulverized food, drug and insecticide containers.

The Consolidated is a fully automatic machine and handles the new fiber cans just as efficiently as it does tin containers. It handles any size from 2 oz. to 40 oz. and fills fifty 2-oz. containers or twenty 16-oz. containers per minute.

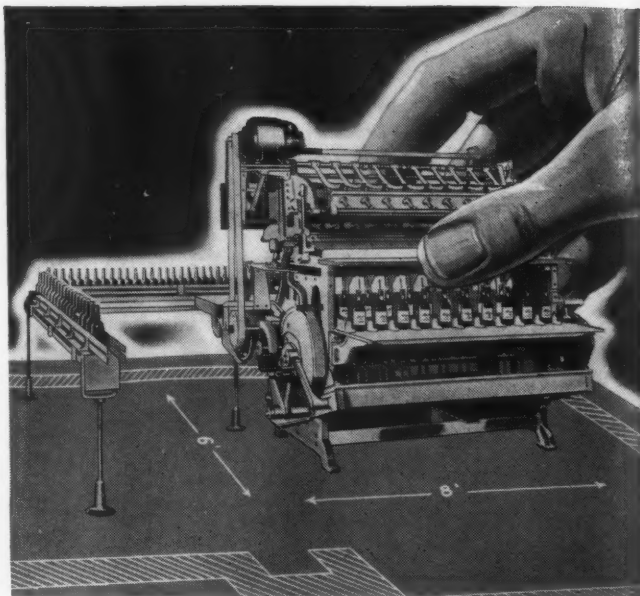
A screw auger carries the material from the hopper to the can and measures it accurately at the same time. The unit handles any non-free-flowing material and the entire operation is practically dust-free.

If you have a packaging problem, let a Consolidated Packaging engineer go over it with you.

CONSOLIDATED

PACKAGING MACHINERY
CORPORATION

1400 WEST AVENUE, BUFFALO, N. Y.



COMPACTNESS: 6' x 8'

If YOUR BOTTLING PLANT area is restricted . . . or, if you are planning a new unit . . . consider this fact:

In just about the floor space required for two office desks, you can install the largest ERMOLD Automatic Multiple Labeler! (Model 100-10 wide.)

And talk about production! In smooth, steady streams, as many as 12,000 bottles per hour can be completely labeled with a single machine—body, neck and foil!

But despite record-breaking labeling output, the operating speed of this unique "multiple" principle machine remains economically s-l-o-w, 20 cycles per minute . . . keeping bottle-breakage and machine "jams" near the zero mark . . . power consumption at new lows . . . and maintenance expense pared to the bone.

Automatic label dating, counting and "safety" clutch mechanisms . . . front and rear controls . . . precision label feeding . . . peak label capacity . . . easy switch to any size bottle . . . custom-built conveyor systems . . . these are among the additional reasons why the majority of America's bottlers use ERMOLD Labeling Machines!

In 4, 6, 8 and 10-bottle "gang" capacities ERMOLD Automatic Multiple Labelers can be linked up with your requirements . . . to label any size or shape bottle . . . to speed output . . . to cut costs.

Write today for all the facts. Edward Ermold Company, 652 Hudson Street, New York 14, New York.



EDWARD

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COMPANY

*Over 64 years
of labeling leadership*



METAL EDGE

TRIPLE TASK FORCE

In war, miracles that have become "commonplace" are performed by the Army, Navy and Marines working together in what might be called a "triple task force."

In war production, amazing accomplishments have been credited to another "triple task force"—Metal Edge, the three-fold method for

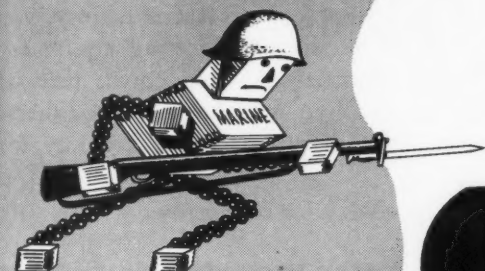
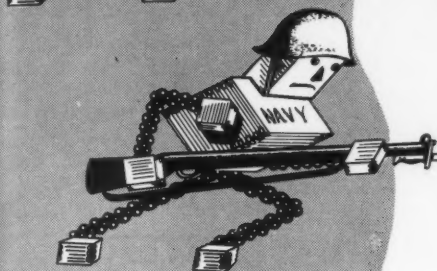
★ PACKAGING

★ MATERIAL HANDLING

★ INVENTORY CONTROL

Expertly engineered to the particular business, some important manufacturers declare Metal Edge has saved them thousands of man-hours—aided materially in reaching production objectives.

May we send you literature, looking to post-war?



NATIONAL METAL EDGE BOX CO.

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DUNNFLEX

A concentrated "HOT-MELT" for

LAMINATING, COATING, FLOCKING, SEAM DOPEING

Liquifies at 130° F. May be thinned with hot water for control of spread, penetration and set. Is thermo-plastic—can be made thermo-setting.

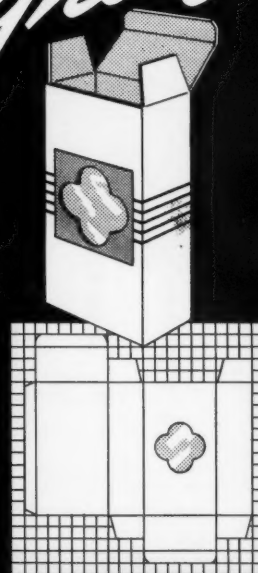
Has inherent flexibility—complete resistance to animal, mineral and vegetable oils; greases; aromatic and aliphatic hydrocarbons; primary, secondary and tertiary alcohols.

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to SELL
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ANNUAL COLOR ACCEPTANCE SURVEY

A survey among several hundred leading manufacturers revealed interesting percentage figures on color preference for a wide range of products. A copy of this informative booklet is waiting for you.

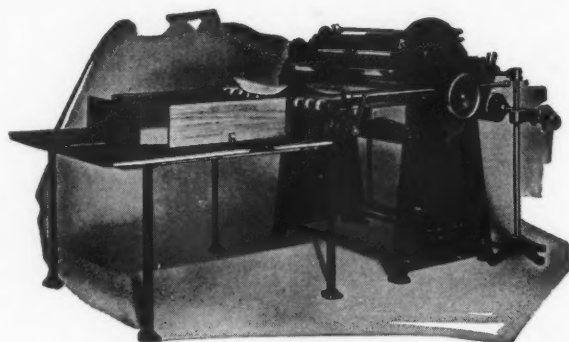
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EAGLE PRINTING INK COMPANY
DIVISION, GENERAL PRINTING INK CORPORATION
 100 SIXTH AVENUE, NEW YORK 13, N. Y.
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*Many Great Nations Are Already
Planning Post War Programs*
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THE BECK SHEETER

After "Unconditional Surrender" is a fact of history, you will want the highest productive Sheeting equipment obtainable, to meet competition. Your choice may be from the hi-speed Electric Eye machines for "spot sheeting" down to the more simple standard machines for plain work.

Write us to-day for to-morrow.

CHARLES BECK MACHINE CO.

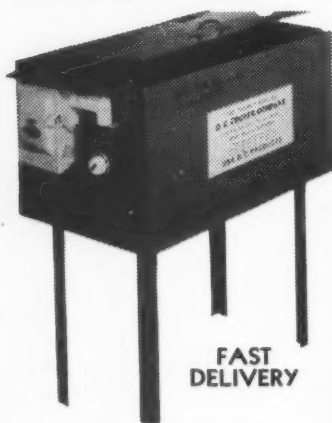
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NOW AVAILABLE

WAX—Meets Government Specifications AXS 1015

SILICA GEL—Packed 1 oz., 2 oz., 8 oz., 1 lb., 5 lb., bulk



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DELIVERY**

Attractive distributors' set-up
available in important cities.
Write for details.

ETHYLCELLULOSE HEATING TANKS

Specially designed for heating Ethyl-
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For export packaging, 5 gal., 15 gal.,
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WIRE BASKETS IN ALL SIZES

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Describes latest methods for re-
moving and preventing rust. Tells
how to remove dirt, oil, grease, paint,
etc., from metal parts, how to heat
wax and clean metals faster, cheaper
and safer. Lists scarce materials now
available.

SEND COUPON FOR FREE COPY

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I want you to send me free bulletin giving information on cleaning, rust removing, etc.

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Plastic FABRICATED PACKAGES

This company offers the widest facilities
for fabricating rigid and flexible plastics
into boxes, canisters, envelopes, covers,
and bags by modern methods. We spe-
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cluding round, oblong and square in all
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For war, we have been manufacturing
eye-shields, waterproof machine gun
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GUMMED SEALING TAPE, PLAIN & PRINTED
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ATLANTIC GUMMED PAPER CORP.

MANUFACTURERS OF "On-to-Sta" GUMMED PAPERS

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Industrial Designer
**MARTIN
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BACK IN NEW YORK

after 18 months
 in California

to work with you
 on packaging
 & the creation of
 new items
 & to improve the
 appearance &
 functional uses
 of products

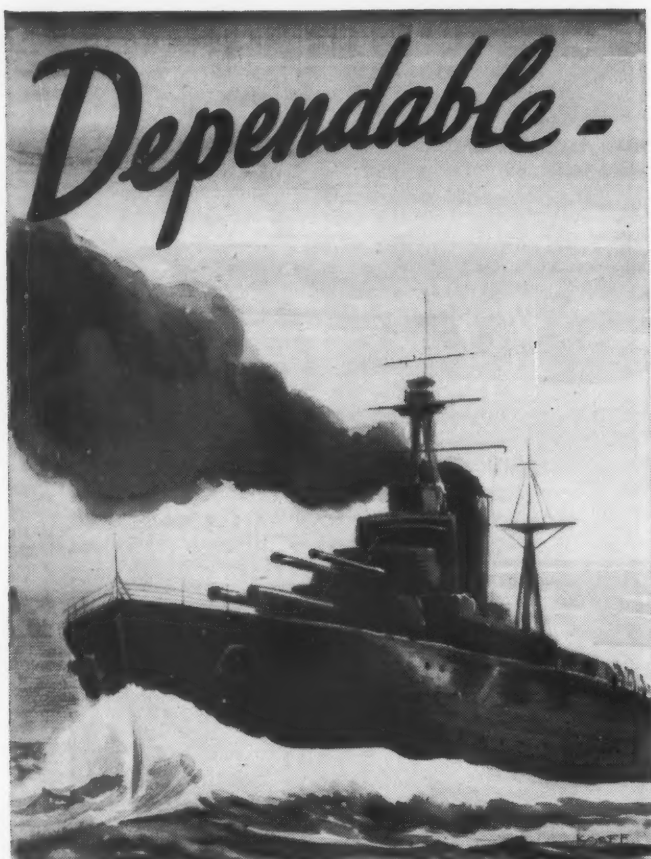


by telephone

by letter

ALGONQUIN 4 • 2760

79 FIFTH AVENUE
 NEW YORK 3



In this day when the difficulties of a disturbed economy are responsible for many product inferiorities, there's one sealing tape that's as dependable as that sturdy member of the fleet known as the "Battle Wagon" — Tanglefoot Gummed Kraft Sealing Tape.

Every inch of it is strong, tough and enduring; held to the highest standards of quality known to the trade through constant research and laboratory testing. To give your products the extra protection that present rough and hurried handling requires, insist on Tanglefoot Gummed Kraft Sealing Tape. It's **DEPENDABLE**.

THE TANGLEFOOT COMPANY
405 Straight St., S. W., Grand Rapids 4, Michigan

Tanglefoot
Gummed Kraft
SEALING TAPE



There are many cases where an industry's adhesive requirements "run forever smoothly". In these instances, having only to maintain **QUALITY**, we can immediately prance through production. But — along with the good there are also those many assignments which pose new problems — requiring **RESEARCH**. It is here that the old know-how symbolized by Manhattan's standard bearer renders star performance! Manhattan's laboratory is constantly searching out better ways for making better glues. What we have learned from solving war's problems is already being incorporated into Manhattan adhesive formulae of tomorrow. We therefore invite your inquiries, certain that through our staff's experienced **COUNSEL**, we can render your planning an invaluable **SERVICE**.

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MANHATTAN PASTE & GLUE CO. INC.
Lion Brand Adhesives
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A Complete **LAMINATING and COATING SERVICE**

The complete service offered by the Milgate line is available to meet your individual needs. Remember . . . our facilities for the development of these products, our experience in their production plus extensive converting equipment and experimental laboratories have been proven under war-time conditions. Let us figure with you on your requirements . . . send for samples of our recent design and fabrication.

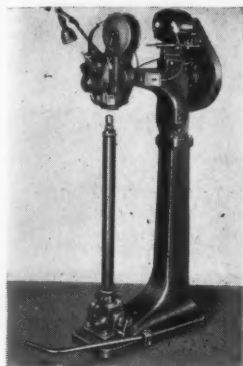
**The Milgate
LINE**

"Hot-Melt"
Coated and/or
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Pulp Boards
Cellophanes
Glassines
Foil
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Cloths

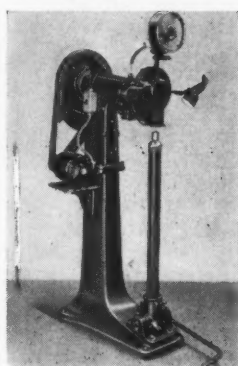
THE PACKAGING DIVISION
E. W. TWITCHELL, INC.

OFFICES: 760 Public Ledger Building, Philadelphia 6, Pennsylvania
MILL: Hamburg (Sussex County), New Jersey

Wire Stitched Shipping Containers Best Protect Your Goods in Transit or in Storage



**Bliss Heavy Duty
Bottom Stitcher**



Latham Bottom Stitcher

Regular Slotted Containers with bottoms wire stitched are widely recognized as the strongest, most rigid and dependable containers available. Wire stitching utilizes the entire strength of the board and is unaffected by moisture conditions in storage or transit.

For your stitching equipment, it will pay you to investigate the machines illustrated here, before you buy.

THE BLISS HEAVY DUTY BOTTOM STITCHER is recommended for heavy duty, high speed, continuous production. Favorably known as the fastest, strongest, most durable and dependable Bottom Stitcher built.

IMPROVED LATHAM BOTTOM STITCHER is a moderate priced machine, recommended for stitching the lighter grades of corrugated and solid fibre containers, in all the usual sizes which do not require the heaviest kind of stitching. Has many features heretofore found only in the highest priced machines.

THE BLISS TOP AND BOTTOM STITCHER. Some products must now be shipped in completely wire stitched containers. This stitcher is recommended for plants or departments where one machine will handle the quantity of bottom and top stitching needed. Quickly changed for bottom or top stitching. Counterbalanced table for easy raising and lowering.

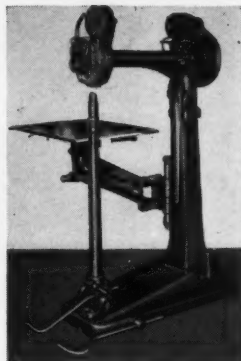
FOR STITCHING FILLED BAGS, the Boston Portable Bench Stitcher has been found practical and convenient, as it can be readily moved to the work to be stitched. Operates from light socket—solenoid operated foot pedal.

ASK FOR LITERATURE ON ANY OF THESE MACHINES

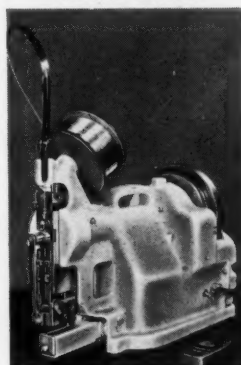
DEXTER FOLDER COMPANY

330 West 42nd Street, New York

Chicago—Boston—Philadelphia—Cincinnati



**Bliss Top and
Bottom Stitcher**



**Boston Portable
Small Bag Stitcher**

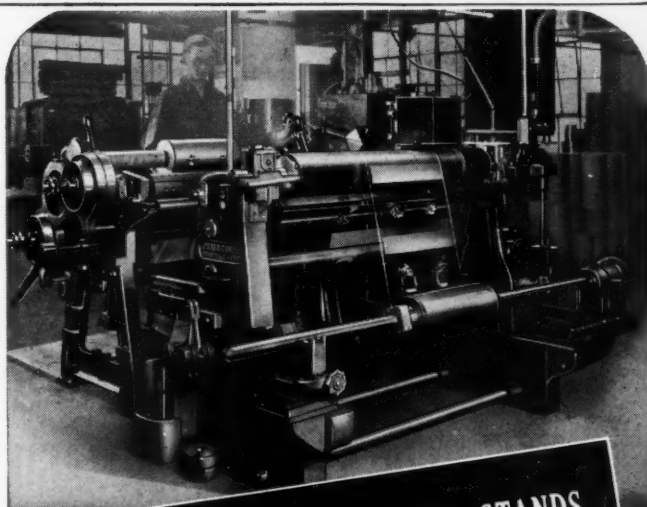
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**PACIFIC COAST
DISTRIBUTION!**

An aggressive, well-established Western sales organization specializing in packaging products is now considering the addition of new lines. Complete Pacific Coast distribution, warehouse, sales and service facilities, plus an experienced sales force of seven field men, and a total staff of twenty, assures proper and effective representation. Twenty years of soundly-financed, successful experience in handling nationally recognized products in the packaging field warrants your thorough investigation with a view to establishing strong Pacific Coast distribution. Write:

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Your inquiries will be treated with strict confidence



CONSTANT-TENSION UNWIND STANDS
WITH OR WITHOUT
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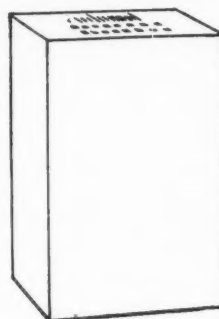
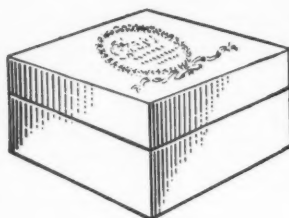
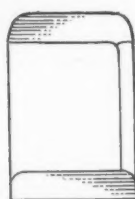
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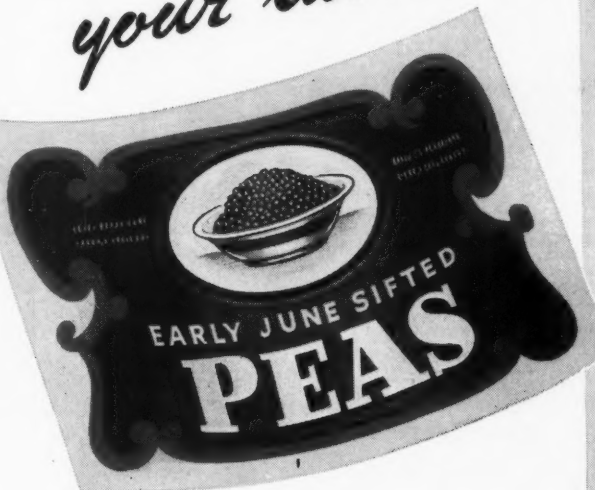
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WE ARE A NEW COMPANY devoted to the solutions of packaging and packaging machinery problems. If you are contemplating a development project in packaging or machinery, contact us and learn of our service. Package development and machine design now. Light fabricating immediately, full scale construction very soon. Package and Equipment Development Co., 2251 N. Knox Ave., Chicago 39, Ill.

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MACHINE—HANDMADE—ROUND AND OTHER PAPER BOXES. Very reliable salesman wants to represent good concern for New York City on commission basis, for now and especially peacetime. What do you manufacture? Box 285, Modern Packaging.

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WE PAY HIGHEST PRICES FOR SURPLUS EQUIPMENT!

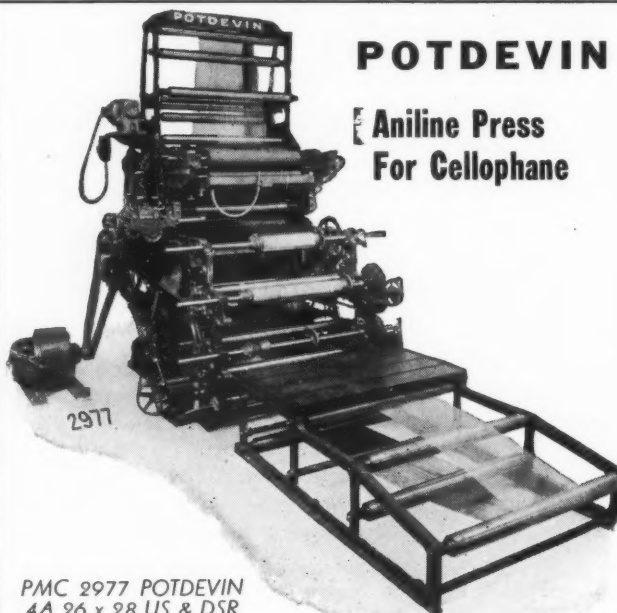
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For new concern engaged in converting of packaging materials. Present production is devoted entirely to war effort. Postwar production will be various types of packages for merchandising retail items. Want man 30-40 years filled with dynamite who has some of following qualifications: Must be experienced in flexible packaging sales, ability to direct sales promotion and advertising, capable of producing immediate war business and planning postwar sales program. Plant located in Wisconsin. Starting salary \$4000 plus bonus. Please state complete qualifications in letter. Box 288, Modern Packaging.

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One Amasco High Speed Rotary Bag Sealer. New in September 1942. One L. Frazier & Sons "Whiz-Packer" for handling dry noodles. New in June 1942. Box 287, Modern Packaging.



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**Aniline Press
For Cellophane**

PMC 2977 POTDEVIN
4A 26 x 28 US & DSR

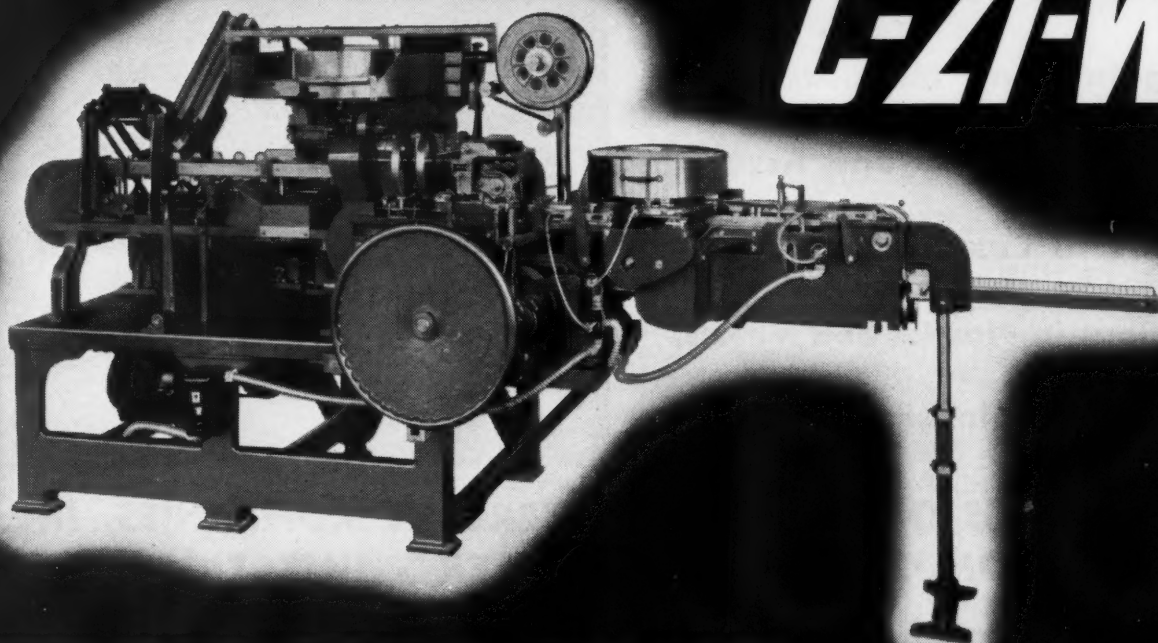
(Model 304)

4-Color Multi-length pigmented Aniline Ink Web Printing Press with Unwind, Slitters and Dual Shaft Rewind. Especially suitable for cellophane.

Note: Continuous drive for ink fountain rollers;—long, variable drying runs between first and second colors, also after last color before rewinding.

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FOR HIGH SPEED PACKAGING

Of Cough Drops and Candy

For your small penny packages and sample packages, this modern duplex cartoner answers all your requirements for high-speed production, since it operates at a speed of 150 complete packages per minute.

The machine is a duplex type, there being twin carton supply magazines, twin tuckers and twin filling chutes which fill two cartons simultaneously. The filling can be done by count or volume, depending on the product, accurate results being obtained either way.

The machine can be equipped for cartoning only, or for cartoning and lining, or for cartoning and wrapping, or a complete job of cartoning, lining and wrapping. When the machine is equipped with lining and wrapping units, the liners and wrappers are automatically cut from a roll and inserted into the carton.

The illustration above shows MODEL C-21-W which cartons small cough drop and candy packages and wraps the completed carton in cellophane at a speed of 150 packages per minute.



Cartoned and wrapped on the Model C-21-W at the rate of 150 packages per minute.



Send U.S. details on any of your packaging problems—we have the machines and the engineering background to help solve them.

Automatic Box Machinery Co. Inc.

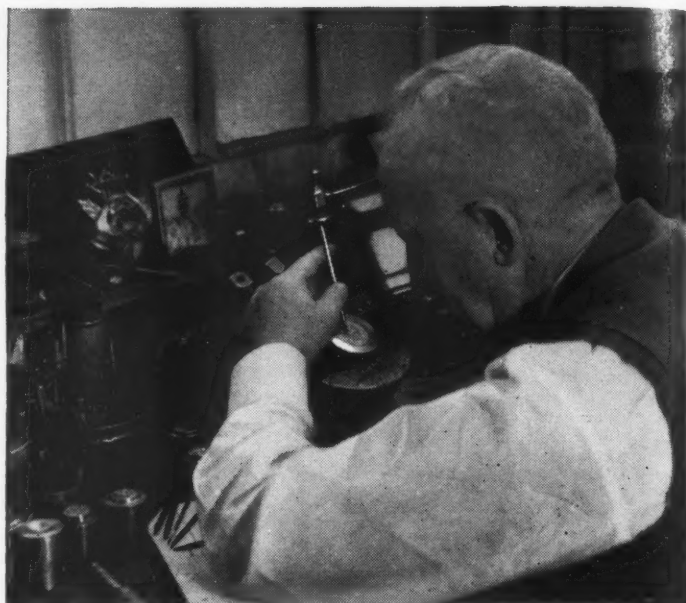
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EXCELLENCE in mold making is Waterbury's forte. Their complete facilities are unequaled for intricate mold work, for Waterbury has the equipment and ability to build special machinery when required for unusual operations. When fine handwork is called for Waterbury has the craftsmen. Waterbury Companies' Engineers & Designers welcome your inquiries. Address Dept. J

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MODERN PACKAGING
BRESKIN PUBLISHING COMPANY
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... A new plastic for a new molding technique*

... now makes possible large size, with lightweight and high strength.

Now, for the first time, you can look forward to molded packages virtually unlimited in size that will also be strong, rigid, lightweight and marked by molded-in color, texture and form.

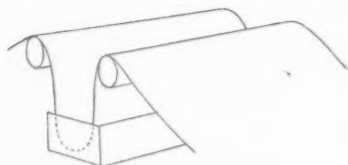
The key that unlocks this interesting prospect is Thalid, a new Monsanto plastic, developed for the new techniques of molding plastics, bonded cloth, paper or wood into intricate shapes ... in inexpensive molds ... at relatively low temperatures ... with little or no pressure.

Perhaps the chief field for Thalid impression moldings will be returnable shipping containers of many types for the coming age of air freight, a field barred to con-

ventionally molded plastics by size restrictions ... to the familiar sheet plastics by lack of adequate strength ... and to conventional laminates because they cannot be molded into any but simple shapes.

THALID is now on war duty exclusively. After victory, however, you can count on rapid developments in Thalid impression moldings for peacetime packaging. Meanwhile we will be glad to supply further information. Simply write: MONSANTO CHEMICAL COMPANY, Plastics Division, Springfield, Massachusetts.

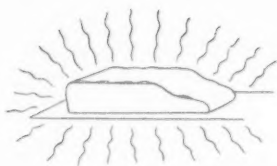
*Impression molding: A term covering the field variously described as low-pressure molding, contact laminating, cast laminating or no pressure laminating.



1. The base material — cloth, paper or thin wood veneers — is impregnated by running through a dip bath of Thalid.



2. While still wet layers of the base material are draped over a mold of wood or metal.



3. This mold is then placed in autoclave or heated chamber. (Vacuum bags are sometimes used and air exhausted around form to provide some pressure along with heat.



4. The final form is then popped out of the autoclave, ready for trimming and final use ... rigid, hard, infusible, abrasion and water-resistant.

The broad and versatile family of Monsanto Plastics includes: Lustron polystyrenes • Cerex heat resistant thermoplastics • Vinyl acetals • Nitron cellulose nitrates • Fibestos cellulose acetates • Resinox phenolics • Thalid for Impression Molding • Resimene melamines • Forms in which they are supplied include: Sheets • Rods • Tubes • Molding Compounds • Industrial Resins • Coating Compounds • Vuepak rigid, transparent packaging materials.

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PLASTICS

SERVING INDUSTRY...WHICH SERVES MANKIND

VUEPAK

TRANSPARENT PACKAGING MATERIAL



*An Important Name
In The Field of Packaging*

WHATEVER THE PRODUCT **PLAN** THE PACKAGE

For into every successful package must go the services of these three



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- 2** THE ENGINEER Shellmar engineers submit your product to extensive laboratory testing in conjunction with various functional materials.



- 3** THE DESIGNER Shellmar package designers create a colorful and eye-appealing design to insure maximum attractiveness and display possibilities.

Shellmar production is still largely devoted to war but these three important package planning services are immediately available.



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